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Synopsis and key to the genera of Dynastinae (Coleoptera, Scarabaeoidea, Scarabaeidae) of Colombia

Héctor Jaime Gasca-Álvarez[1], Germán Amat-García[2]

1 *Corporación Sentido Natural; Calle 134 A No. 14–44 Bogotá, D. C., Colombia* **2** *Insects of Colombia Research Group, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Apartado 7495, Bogotá, D.C., Colombia*

Corresponding authors: *Héctor Jaime Gasca-Álvarez* (hjgasca@sentidonatural.org), Germán Amat-García (gdamatg@unal.edu.co)

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Abstract

An illustrated key to identify the adults at the generic level of Dynastinae known from Colombia is provided. A synopsis for each genus is given with updated information on the diversity and distribution of species in Colombia and worldwide.

Keywords

Illustrated key, Scarabaeidae, Dynastinae, Colombia, Biodiversity.

Introduction

The subfamily Dynastinae is a cosmopolitan group of beetles widely distributed in most biogeographical regions of the world (except in the polar regions), and the majority of species are distributed in the tropics, especially in the Neotropics. There are approximately 220 genera and 1500 species within the Dynastinae world wide (Ratcliffe 2003). Endrődi (1985) estimated about 2000 species world wide. Some authors (e.g.,

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Baraud 1985; Dechambre 1986) referred to this taxon at the family level. In groups belonging to Scarabaeoidea, the phylogenetic relationships and taxonomic hierarchy are poorly studied. A comparative analysis including all known tribes and genera would provide a much needed evolutionary and taxonomic foundation in the Scarabaeoidea. To date, however, many genera lack complete taxonomic revisions and most larvae remain undescribed (Morón et al. 1997).

Adult Dynastinae are characterized by exposed mandibles in dorsal view; small and thin labrum with the border usually not surpassing the clypeal margin; antennae with nine or ten segments with the base of the scape hidden by the clypeus; scutellum visible; mesepimeron hidden; pygidium exposed; procoxae transverse; middle and hind tarsal claws simple; and apex of the fifth meso- and metatarsomeres lacking a longitudinal slit. The body shape is generally robust, and the color is generally dark brown, black or reddish, occasionally testaceous yellow, with maculae or dark symmetrical lines or spots. Body length ranges from 4 to 160 mm (including the head and pronotal projections in males).

The dynastine beetles are important in nutrient recycling. The larvae are able to fragment large amounts of wood during their feeding, greatly expediting decomposition time (Morón 1985). In the process, they produce detritus and excretions that facilitate the action of other decompositional agents in the microfauna and microflora. This ecological role makes them essential for nutrient recycling in tropical forest ecosystems (Morón 1985).

Adults of most species are nocturnal or crepuscular and are attracted to lights at night. Dynastines feed on foliage, sap secretions, fruits, flowers, and pollen of plants. Larvae are saprophagous or phytophagous, feeding on roots, stems, decaying logs, or organic matter. Some species are economically important, causing damage to crops such as corn and sugarcane (Morón 2004). Males in several species (mainly in the tribes Dynastini, Agaocephalini, and Oryctini) possess prominent horns on the head and/or the thorax, which, because of their great size, give rise to vernacular names such as "rhinoceros beetle", "elephant beetle", "Hercules beetle" or "unicorn beetle" (Ratcliffe 2003).

In the last ten years in Colombia, the Dynastinae subfamily has been the subject of increasing interest. One of the most remarkable pioneering studies was Restrepo's (1998) undergraduate thesis that provided the first contribution to the study of the phytophagous scarab beetles in Colombia. In this work, the author compiled and analyzed information about the phytophagous scarabs and presented an identification key to 76 genera and a descriptive synopsis of important agricultural species. For the subfamily Dynastinae, Restrepo reported 40 genera and 195 species in Colombia, and seven species were of agricultural importance. From this study, and as a posthumous tribute, two important reference papers for the study of the Dynastinae were published that increased the number of species in Colombia to 200: Especies de Chisas (Coleoptera: Melolonthidae) de importancia agrícola en Colombia (Restrepo and López-Avila 2000) and Catálogo de Coleoptera Melolonthidae (Scarabaeidae: Pleurosticti) de Colombia (Restrepo et al. 2003).

Recent works have continued the study of the Dynastinae in Colombia. Pardo-Locarno et al. (2006), Neita et al. (2007), Vallejo and Morón (2008), Neita and Orozco (2009), and Neita and Ratcliffe (2009) provided descriptions of immature stages of species found in the country. Additional contributions that improve the knowledge of the dynastine fauna in Colombia include publications by Young and LeTirant (2005), Pardo-Locarno et al. (2006) and Ratcliffe (2008).

This faunistic survey recorded 42 genera and 213 species of Dynastinae in Colombia. At the genus level, Colombia surpasses other countries with great diversity such as Mexico and Costa Rica. Colombia possesses approximately 20% of the generic richness in the world (Table 1). Ten genera are represented by a single species each, whereas genera such *Haplophileurus* Kolbe, *Horridocalia* Endrődi, *Pucaya* Ohaus, and *Thronistes* Burmeister have all of the species comprising each genus. In recent years the monotypic South American genus *Acrobolbia* Ohaus was removed from the subfamily Rutelinae and transferred to the tribe Cyclocephalini (Jameson et al. 2002). According to the known geographical distribution (Ecuador, Peru and Venezuela), *Acrobolbia* should be found in Colombia. However, *Acrobolbia* has not yet been recorded in Colombia. Accordingly, *Acrobolbia* is not included in the identification key below.

In this contribution we present an illustrated identification key to the adults of the genera of Dynastinae found in Colombia. In addition, a diagnosis, world and national distributions, and the current species number in the world and in Colombia are included for each genus.

Materials and methods

For the construction of the identification key, we used minimally variable characters that were consistently expressed when using routine observation techniques (following Ratcliffe 2003).

Table 1. Dynastinae generic diversity in the World, Colombia, and other regions of the Neotropics.

Tribe	World [1]	Mexico [2]	Brazil [3]	Costa Rica Panama [4]	Honduras Nicaragua El Salvador [5]	Colombia [6]	National Percentage
Agaocephalini	11	1	4	2	1	6	54.54 %
Cyclocephalini	14	6	12	7	7	8	57.14 %
Dynastini	13	3	3	3	3	3	23.08 %
Oryctini	28	7	7	9	8	7	25.00 %
Pentodontini	108	8	11	6	5	8	7.40 %
Phileurini	36	5	15	9	7	10	27.78 %
TOTAL	210	30	52	36	31	42	20 %

[1] Endrődi (1985); Morón and Ratcliffe (1996); Jameson et al. (2002); Jameson and Wada (2004); Ratcliffe and Cave (2006); [2] Morón et al. (1997); [3] Endrődi (1985); [4] Ratcliffe (2003); [5] Ratcliffe and Cave (2006); [6] Current study.

This work is based on data obtained from specimens deposited in the entomological collection of the Instituto de Ciencias Naturales, Universidad Nacional, Bogotá [ICN-MHN], on the original descriptions by Endrődi (1966, 1969, 1970, 1976a-b, 1977, 1985), Ratcliffe (1981b, 2003), Morón et al. (1997), Ratcliffe and Cave (2006), Ide (1998) and on the identification keys by Endrődi (1985), Restrepo (1998), Delgado et al. (2000), Ratcliffe (2003), Ratcliffe and Cave (2006) and Gasca et al. (2008). For this work, was followed the classification adopted by Browne and Scholtz (1995), Lawrence and Newton (1995, 1999) and Jameson and Ratcliffe (2002) at the family level and Endrődi (1985) at the subfamily level.

Key to the tribes of adult Dynastinae of Colombia

1. Mentum widened or expanded, covering bases of labial palpi. Body more or less dorsoventrally flattened..... **Phileurini**
– Mentum narrow, not covering bases of labial palpi. Body not dorsoventrally flattened..... **2**
2. Head and pronotum convex, without horns, tubercles or fovea in both sexes, or with inconspicuous tubercles posterior to frontoclypeal suture. Males in many species with front claws enlarged. Tarsomeres of all legs usually long and cylindrical ..... **Cyclocephalini**
– Head and/or pronotum with horns, tubercles or fovea. Males with front claws of variable size, enlarged or not. Protarsomeres and mesotarsomeres usually short and triangular **3**
3. Protarsus in males longer than protibiae. Metatarsal segments usually cylindrical, basal segment with strong apical spur ..... **Dynastini**
– Protarsus in males shorter than or subequal the same size to protibiae. Metatarsal segments triangularly expanded, basal segment variable in form..... **4**
4. Elytra tomentose or irregularly punctate. Punctures slightly impressed. Body slightly dorsoventrally flattened..... **Agaocephalini**
– Elytra smooth or with punctures usually in distinct rows (except for some *Heterogomphus* species). Punctures strongly or moderate impressed. Body not dorsoventrally flattened..... **5**
5. Apex of metatibia truncate or smooth (Fig 1). Sexual dimorphism usually not well-pronounced..... **Pentodontini**
– Apex of metatibia usually strongly crenulate or with distinct teeth (Fig 2) (except for *Coelosis* species). Sexual dimorphism usually pronounced.... **Oryctini**

Key to the genera of adult Agaocephalini of Colombia

1. Body surface tomentose, grayish brown color..... **2**
– Body surface glabrous, irregularly punctate **3**

2. External edge of mandibles with 3 teeth (Fig 3). Prosternal process short or moderately long. Pronotum with strong horn, short to large, flat, narrow, usually directed upwards (Fig 4)..... ***Lycomedes*** **Bréme**
– External edge of mandibles with 2 teeth (Fig 5). Prosternal process absent. Pronotum with large horn, directed forward, thin and curved (Fig 6) ....***Spodistes*** **Burmeister**
3. Protibia quadridentate, basal tooth short in minor males. Head of males with two large, divergent, forward directed horns; horns curved upward, apices rounded (Fig 7). Females lacking horns.....***Aegopsis*** **Burmeister**
– Protibia tridentate. Head with thick horn, curved upward, apex bifurcated **4**
4. Males with frontal horn short and thick, slightly curved. Pronotum with forward directed knob with acute apex, surface smooth. Females lacking horn on head and knob on pronotum. Head and pronotum black, elytra reddish brown .....***Mitracephala*** **Thomson**
– Males with frontal horn large, curved upwards, apex bifurcate. Pronotum convex or with high knob. Body black, brown, or with dark spots **5**
5. Apex of frontal horn in males bifurcate. Pronotum with wide, high knob; apex rounded, surface densely punctate. Females lacking frontal horn. Elytra with punctures strongly impressed. Prosternal process high, apex dilated. Body black or brown.....***Horridocalia*** **Endrődi**
– Apex of frontal horn in males emarginated or bifurcated. Head of females with 2 transversal tubercles. Pronotum convex, smooth. Elytra strongly reticulated and finely punctate. Prosternal process absent. Body yellowish brown with dark spots ..... ***Brachysiderus*** **Prell**

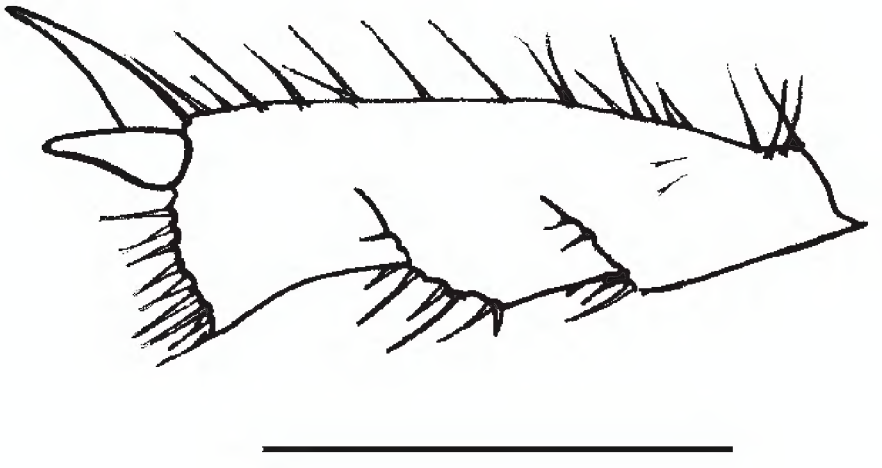

Figure 1. Metatibia of *Tomarus* sp. (scale bar: 5 mm).

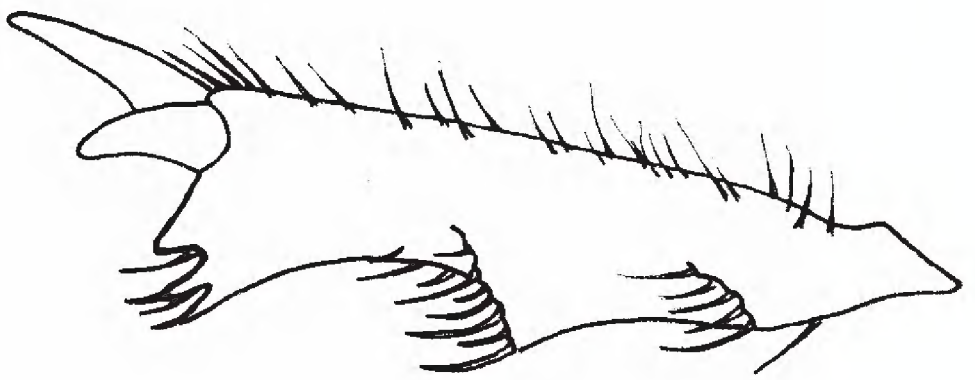

Figure 2. Metatibia of *Heterogomphus schoenherri* Burmeister (scale bar: 5 mm).

Figure 3. Right mandible of *Lycomedes* sp. (scale bar: 1 mm).

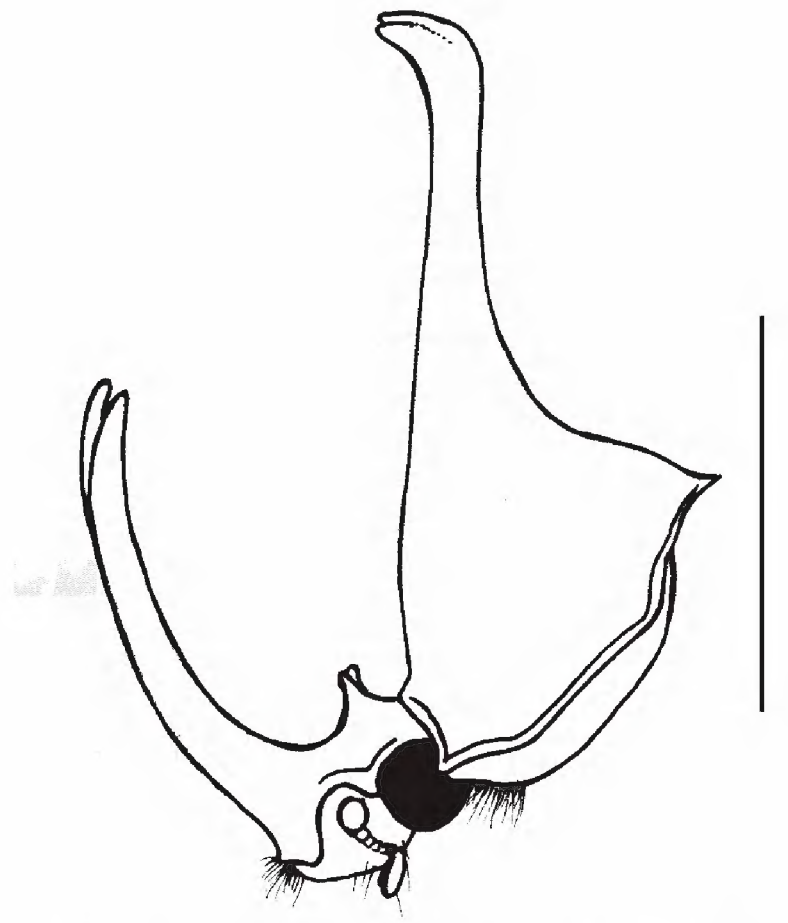

Figure 4. Male head and pronotum (lateral view) of *Lycomedes* sp. (scale bar: 1 cm).

Figure 5. Right mandible of *Spodistes* sp. (scale bar: 1 mm).

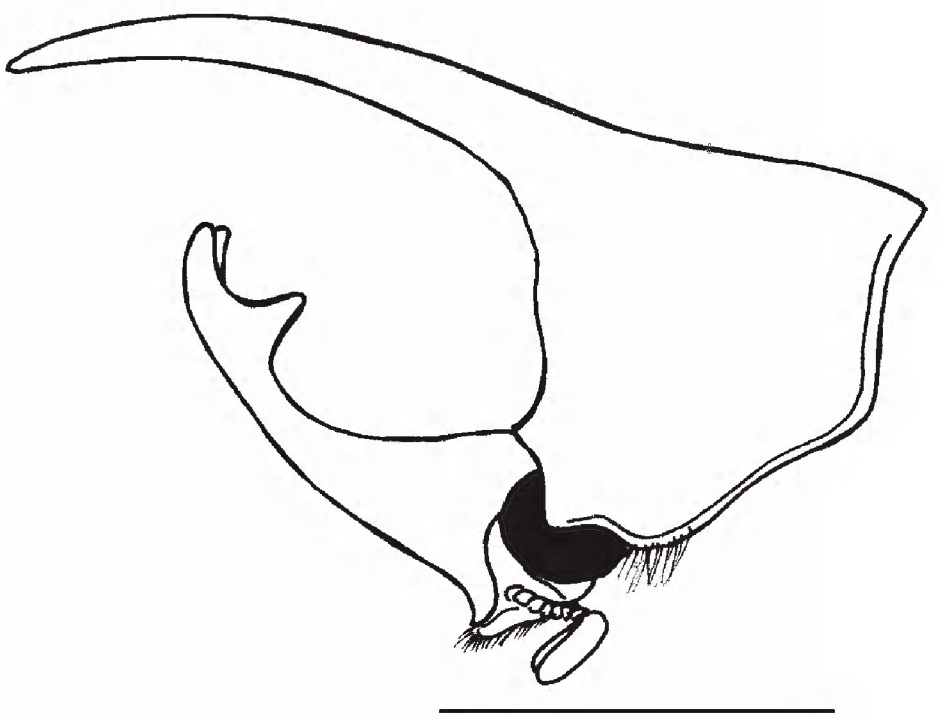

Figure 6. Male head and pronotum (lateral view) of *Spodistes* sp. (scale bar: 1 cm).

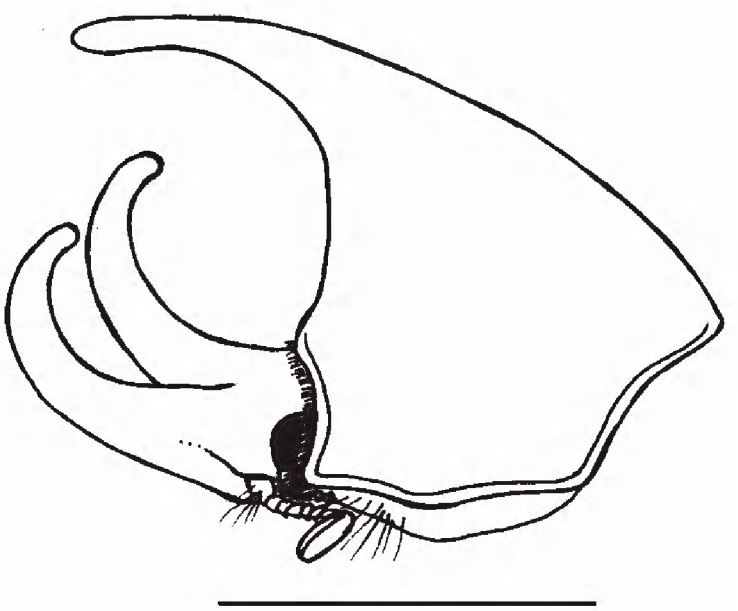

Figure 7. Male head and pronotum (lateral view) of *Aegopsis curvicornis* Burmeister (scale bar: 1 cm).

Key to the genera of adult Cyclocephalini of Colombia

1. Protarsomeres in males enlarged; external claws larger than internal. Females with protarsomeres and claws simple. Clypeal length subequal to or longer than length of frons; apex parabolic, quadrate, weakly emarginated, or rounded. Metatibia semicircular in cross section **2**
– Protarsomeres in males and females simple, not enlarged; tarsal claws simple. Clypeal length shorter than length of frons; apex trapezoidal (Fig. 8). Metatibia flattened dorsoventrally, not semicircular in cross section ..... ***Stenocrates*** **Burmeister**
2. Propygidium with numerous long setae ..... ***Chalepides*** **Casey**
– Propygidium without long setae..... **3**
3. Clypeus with apex acute or narrowly parabolic..... **4**
– Clypeus with apex rounded, truncate, trapezoidal, or emarginate..... **5**
4. Clypeus with apex acuminate (Fig. 9). Mentum with apex emarginate, surface not furrowed in apical third. Base of pronotum with marginal bead..... ***Mimeoma*** **Casey**
– Clypeus with apex narrowly parabolic (Fig. 10). Mentum with apex deeply emarginated, surface with furrow in apical third. Base of pronotum without marginal bead ..... ***Ancognatha*** **Erichson**
5. Clypeus trapezoidal or subtrapezoidal. Anterior margin of pronotum weakly produced anteriorly at middle (Fig. 11)..... ***Dyscinetus*** **Harold**
– Clypeus quadrate,rectangular or parabolic. Anterior margin of pronotum not produced anteriorly at middle..... **6**
6. Clypeus with sides usually divergent from base, apex broadly rounded (Fig. 12). Maxilla without teeth (except for *Aspidolea fuliginea*) ..... ***Aspidolea*** **Bates**
– Clypeus with sides parallel or convergent from base, apex rounded, truncate or emarginate. Maxilla with visible teeth..... 7
7. Clypeus with sides convergent, apex rounded, parabolic or emarginated (Fig. 13). Males with protarsus enlarged..... ***Cyclocephala*** **Dejean**
– Clypeus subquadrate, sides weakly converging, apex truncate or emarginate. Males with protarsus simple not enlarged..... ***Erioscelis*** **Burmeister**

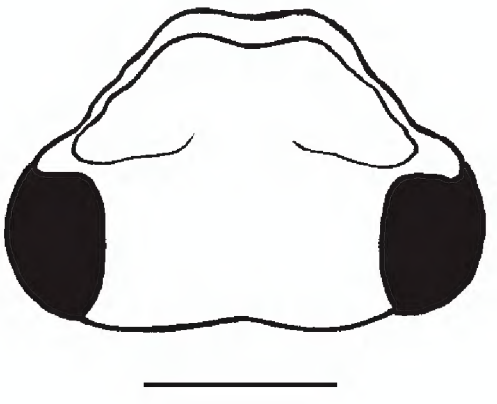

Figure 8. Head of *Stenocrates* sp. (scale bar: 2 mm).

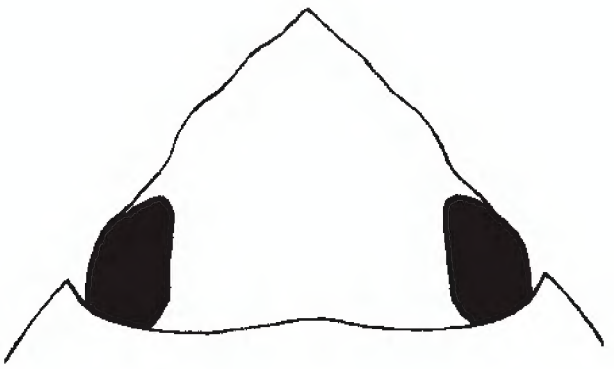

Figure 9. Head of *Mimeoma* sp. (scale bar: 2 mm). (Figure taken from Ratcliffe 2003).

Figure 10. Head of *Ancognatha scarabaeoides* Erichson.

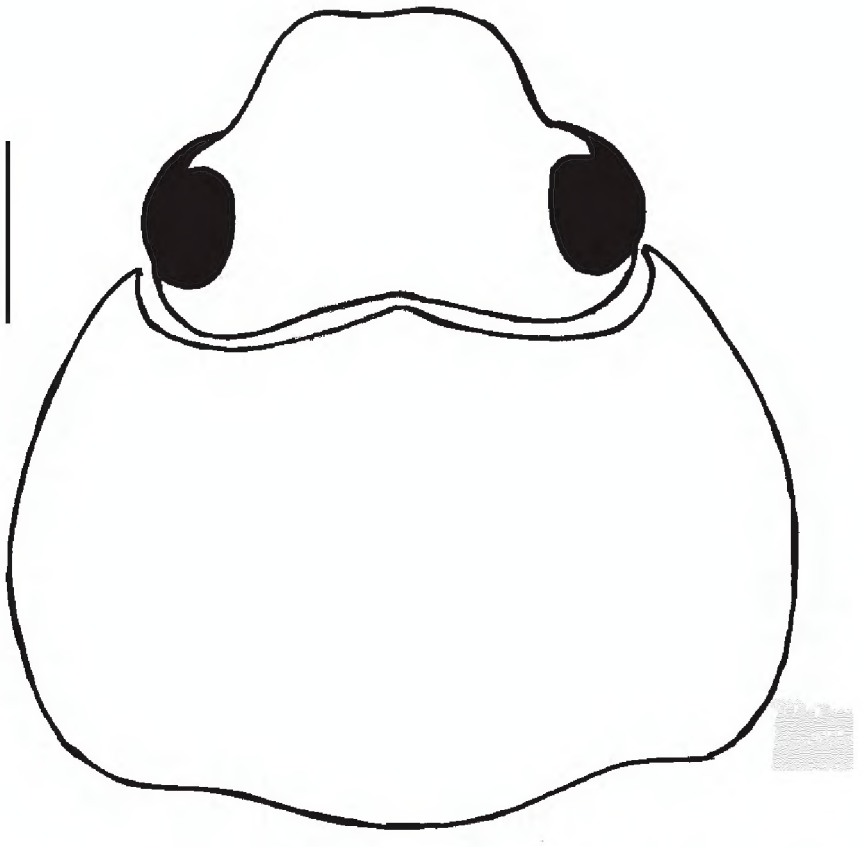

Figure 11. Head and pronotum of *Dyscinetus dubius* (Olivier) (scale bar: 2 mm).

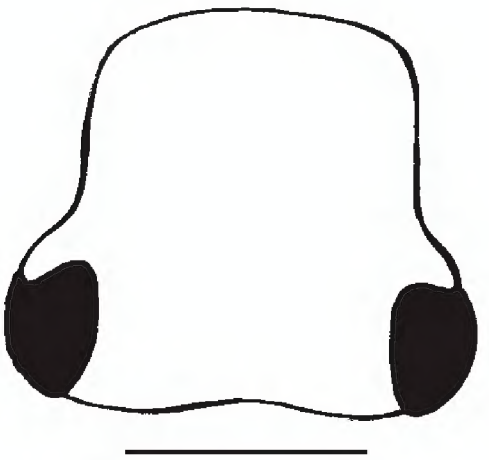

Figure 12. Head of *Aspidolea* sp. (scale bar: 2 mm).

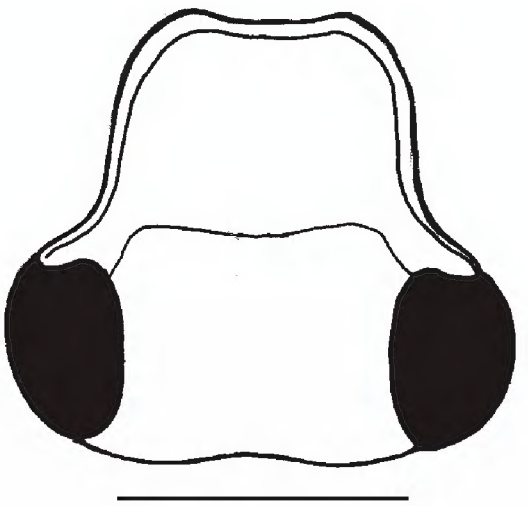

Figure 13. Head of *Cyclocephala* sp. (scale bar: 2 mm).

Key to the genera of adult Dynastini of Colombia

1. Clypeus emarginate or with 2 spiniform teeth widely separated. Males with head horn large and slightly flattened, apex bifurcate. Pronotum in males with 2 acute horns, 1 at each anterior angle (Fig. 14). Females on head with simple or double tubercle; pronotum simply convex ..... ***Megasoma*** **Kirby**
– Clypeus truncate or with 2 adjacent teeth. Males with head horn large, with teeth on dorsal surface, apex acuminate or rounded. Pronotum in males with a central horn. Females with frontal tubercle, pronotum simply convex **2**
2. Mandibles with apex entire or weakly notched. Pronotum in males with horn directed upwards, apex acuminate or with erect and wide tubercle (Fig. 15). Pronotum in females usually strongly punctuate ..... ***Golofa*** **Hope**
– Mandibles with 2 apical teeth. Pronotum in males with forward directed horn, apex acute (Fig. 16). Pronotum in females usually strongly rugose..... ..... ***Dynastes*** **MacLeay**

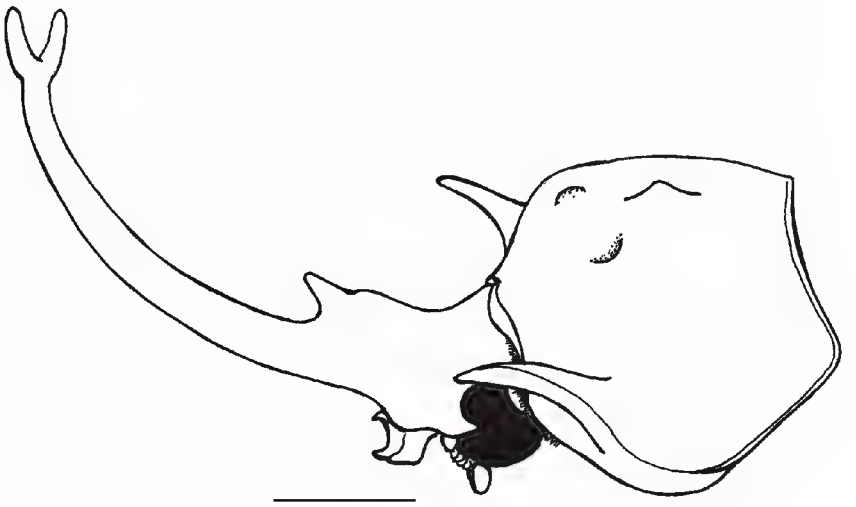

Figure 14. Male head and pronotum (lateral view) of *Megasoma mars* (Reiche) (scale bar: 1 cm).

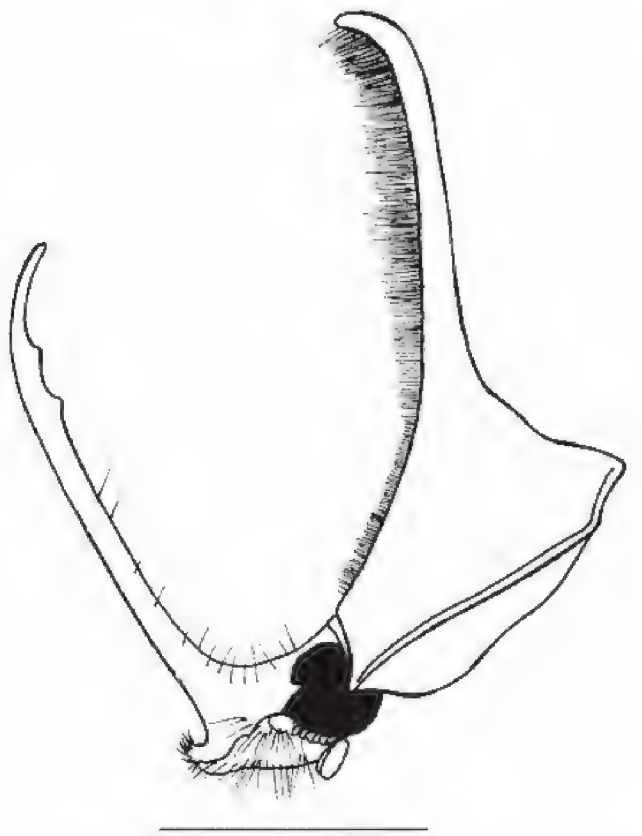

Figure 15. Male head and pronotum (lateral view) of *Golofa* sp. (scale bar: 1 cm).

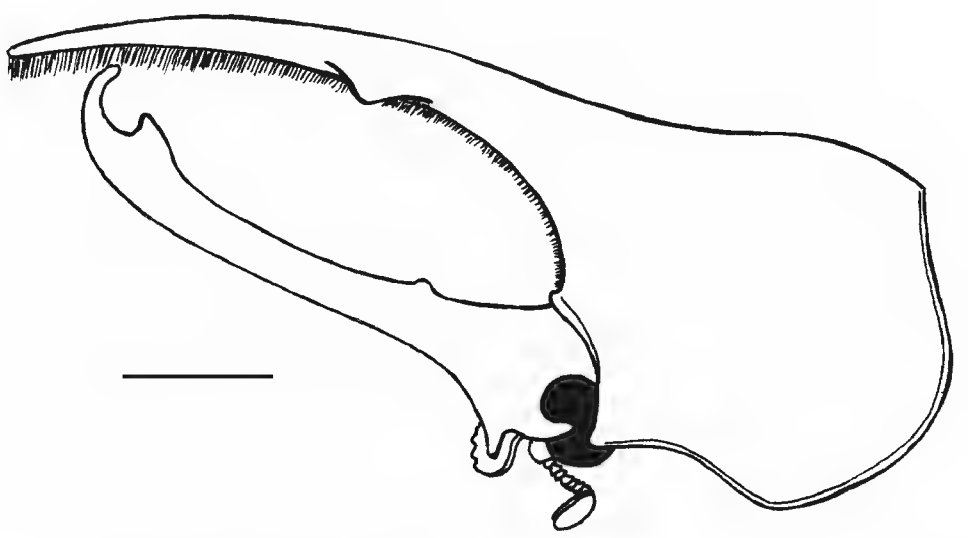

Figure 16. Male head and pronotum (lateral view) of *Dynastes hercules* (Linnaeus) (scale bar: 1 cm).

Key to the genera of adult Oryctini of Colombia

1. Protibia tridentate **2**
– Protibia quadridentate **3**
2. Elytra smooth, black, shiny. Clypeus emarginate or truncate (bidentate in *M. philoctetes*). Mandibles bidentate (Fig. 17) ..... ***Megaceras*** **Hope**
– Elytra with 5 distinct rows of punctures on relatively smooth surface. Clypeus with apex sharply bidentate. Mandibles tridentate (Fig. 18) .... ***Coelosis*** **Hope**
3. Elytra with deeply furrowed rows of punctures. Mandibles broad, with 2 lobes, strongly projecting from beneath clypeus. Clypeus with conical tubercle on dorsal surface. Pronotal fovea of males broadly triangular, extending almost to posterior margin of pronotum ..... ***Gibboryctes*** **Endrődi**
– Elytra smooth, rugose, or with punctures, never with deeply furrowed rows of punctures. Mandibles variably toothed, never with 2 large lobes. Head with 1–2 conical tubercles in frontoclypeal region, never with 1 on top of clypeus. Males with pronotal fovea variable in form **4**
4. Body form elongate, subparallel. Protibia with teeth projecting almost at right angles. Apex of metatibia with 2 strong teeth. Males with anterior half of pronotum nearly smooth and with single, median horn or tubercle (Fig. 19). Females without fovea on pronotum ..... ***Podischnus*** **Burmeister**
– Body form broader, sides rounded (not subparallel). Protibia with teeth projecting obliquely. Apex of metatibia crenulate or with 1, 3, or 4 teeth. Males with anterior half of pronotum densely punctate or rugose or, if nearly smooth, then with lateral horns or tubercles. Females with or without fovea on pronotum **5**
5. Both males and females with head horn. Prosternal process short, not produced beyond middle of protrochanters. Pronotum with anterior margin distinctly emarginate at center (Fig. 20)..... ***Enema*** **Hope**
– Males with or without head horn; females never with head horn, instead tuberculate at most. Prosternal process long, produced beyond middle of protrochanters. Anterior margin of pronotum lacking emargination at center . **6**
6. Frons in males and females unarmed or with 2 tubercles, never with horn on the head. Mandibles tridentate. Pronotum in males with subapical horn and usually with lateral horn or elevated, triangular ridge on each side (Fig 21). Females with fovea in anterior third of pronotum ..... ***Strategus*** **Kirby**
– Males usually with distinct head horn; females with single tubercle. Mandibles without teeth, or with 1–2 rounded teeth. Pronotum in males with horn or prominence arising from posterior half and with or without lateral horns; females usually lacking pronotal fovea..... ***Heterogomphus*** **Burmeister**

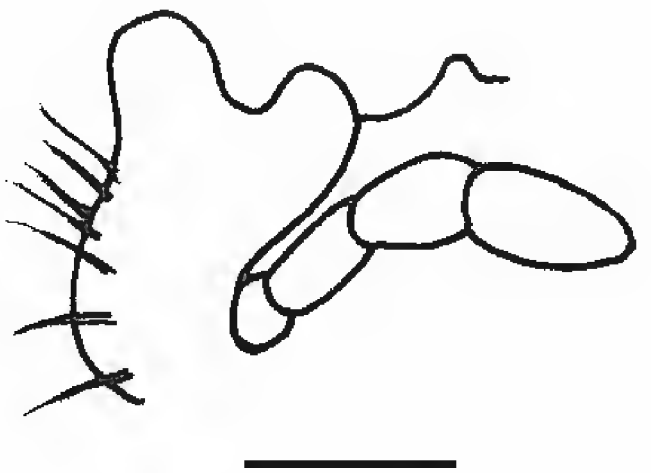

Figure 17. Right mandible of *Megaceras* sp. (scale bar: 1 mm).

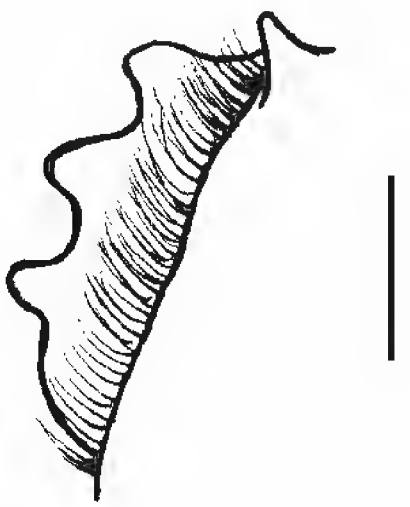

Figure 18. Right mandible of *Coelosis biloba* (Linnaeus) (scale bar: 1 mm).

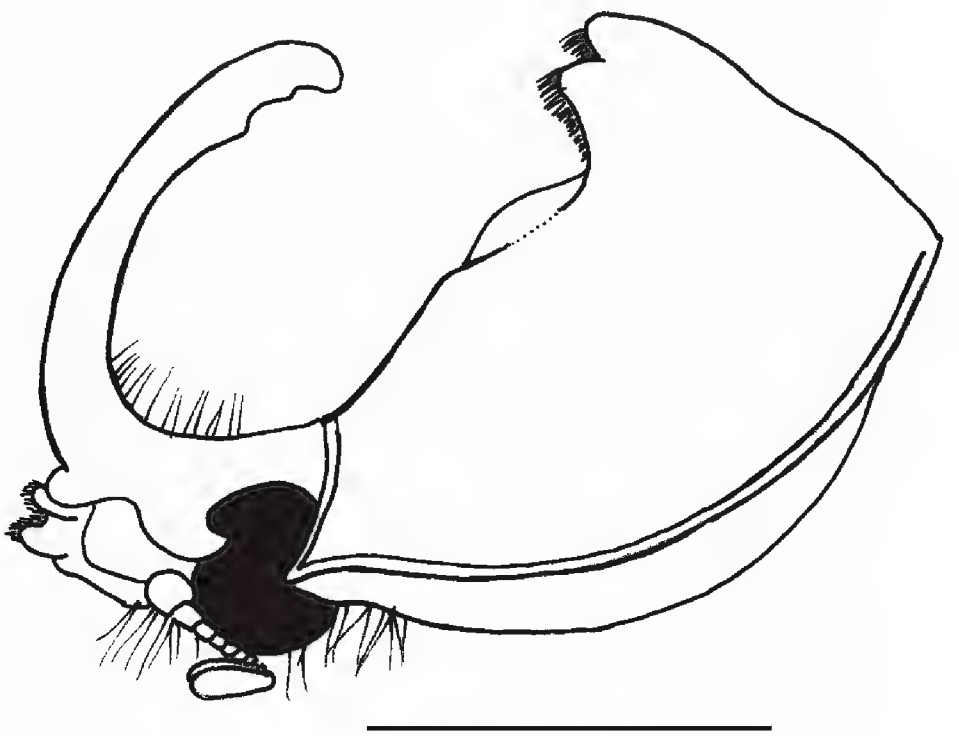

Figure 19. Male head and pronotum (lateral view) of *Podischnus agenor* (Olivier) (scale bar: 1 cm).

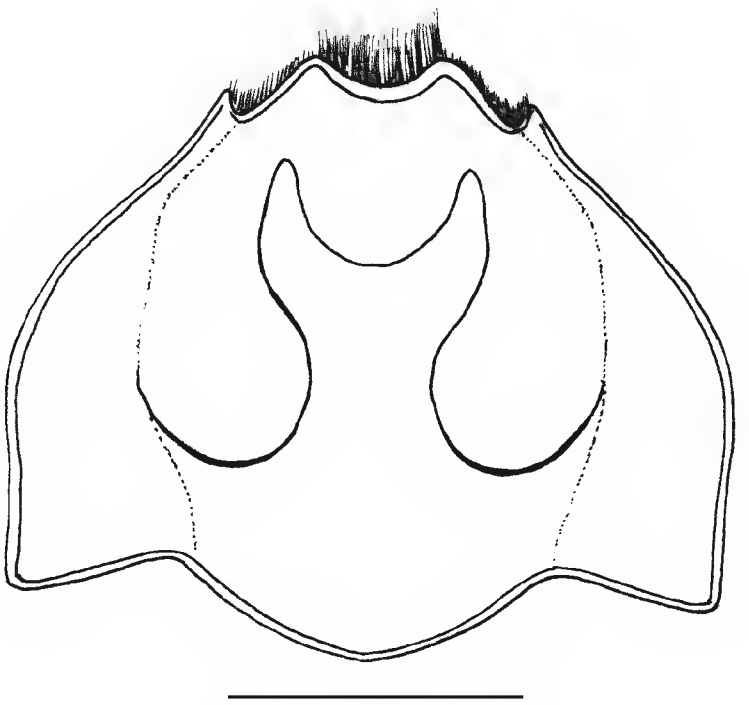

Figure 20. Pronotum of *Enema pan* (Fabricius) (scale bar: 1 cm).

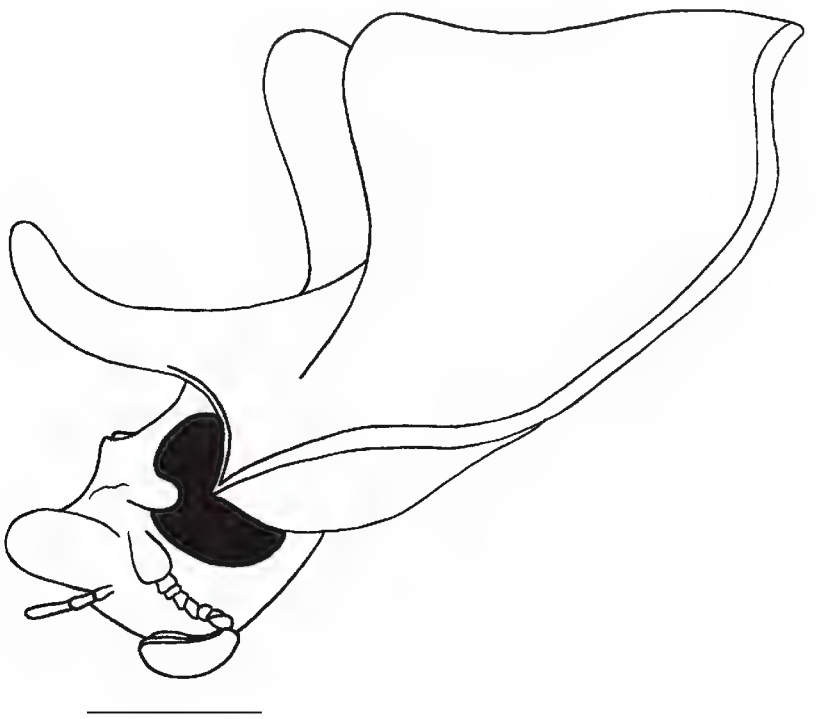

Figure 21. Male head and pronotum (lateral view) of *Strategus aloeus* (Linnaeus) (scale bar: 5 mm).

Key to the genera of adult Pentodontini of Colombia

1. Body black or dark brown, almost black **2**
– Body brownish-yellow, brown, red or reddish brown **6**
2. Mandibles with 3 teeth (Fig. 22). Propygidium with stridulatory area..... **3**
– Mandibles with 2 teeth or without teeth. Propygidium without stridulatory area **4**

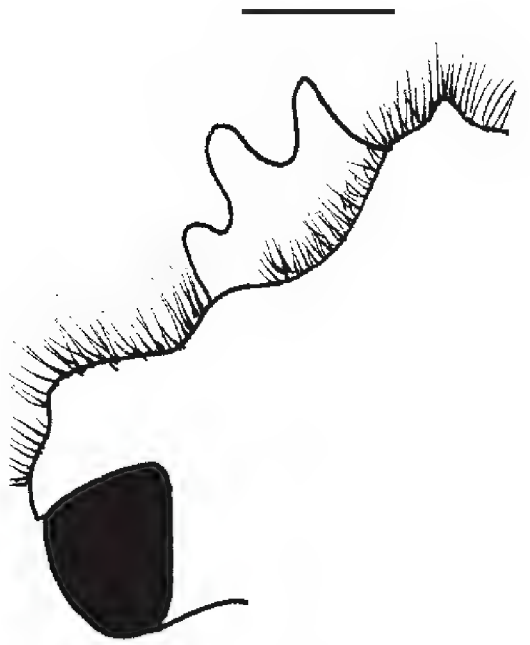

Figure 22. Right mandible of *Bothynus complanus* (Burmeister) (scale bar: 1 mm).

3. Protibia quadridentate. Pronotum with apical tubercle, subapical fovea deep (Fig. 23). Elytra smooth or moderately punctate. Propygidium elongated, pygidium short ..... ***Bothynus*** **Hope**
– Protibia tridentate. Pronotum convex, without tublercle. Elytra with rows of impressed punctures. Propygidium short, pygidium normal..... .....***Hylobothynus*** **Ohaus**
4. Clypeus truncate or relatively contracted at apex, bidentate. Pronotum with or without apical tubercle and subapical fovea..... **5**
– Clypeus acuminate, strongly reflexed. Pronotum with large apical tubercle, fovea wide and deep. Both sides of pronotum with obtuse carina..... .....***Oxyligyrus*** **Arrow**
5. Mandibles with 2–3 teeth, third tooth obtuse. Pronotum with apical tubercle and deep subapical fovea (Fig. 24)..... ***Tomarus*** **Erichson**
– Mandibles without teeth, external edge sinuate, rounded. Pronotum convex, without tubercle and fovea (Fig. 25).....***Euetheola*** **Bates**
6. Mandibles small, narrow, external edge curved. Clypeus truncate. Pronotum convex, with deep transverse fovea or with 2 small tubercles behind anterior margin. Protibia tridentate..... 7
– Mandibles broad, with 2 apical teeth. Clypeus contracted, emarginate. Pronotum in males with high and wide knob, apex bifurcate. Fovea broad. Females with convex pronotum. Head of males with small horn, apex rounded; females with tubercle. Protibia quadridentate..... ***Thronistes*** **Burmeister**
7. Frontal suture impressed (Fig. 26). Frons without tubercles or horns. Pronotum convex, with 2 small tubercles behind anterior margin ....***Parapucaya*** **Prell**
– Frontal suture absent. Frons with tubercle or semiconical horn close to each eye. Pronotum binodose, with transversal fovea (Fig. 27) ..... ***Pucaya*** **Ohaus**

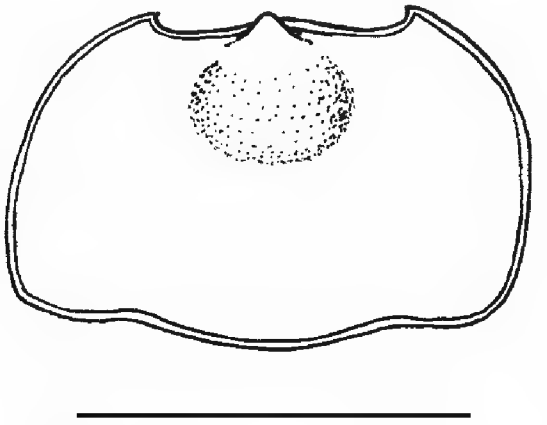

Figure 23. Pronotum of *Bothynus complanus* (Burmeister) (scale bar: 1 cm).

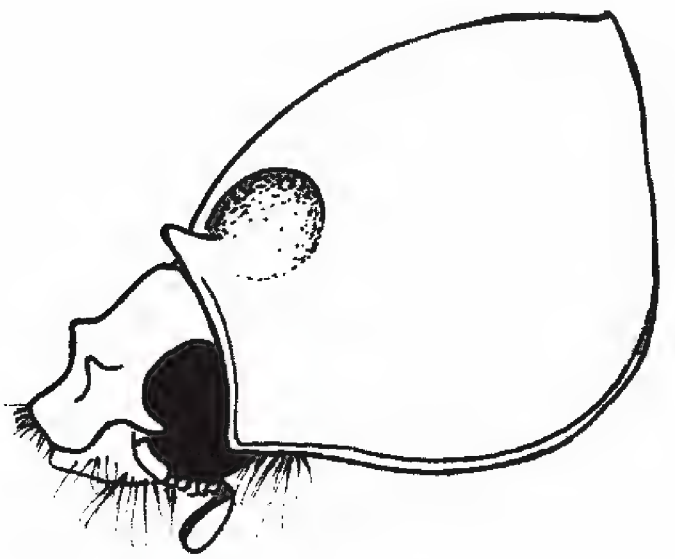

Figure 24. Head and pronotum (lateral view) of *Tomarus* sp. (scale bar: 1 cm).

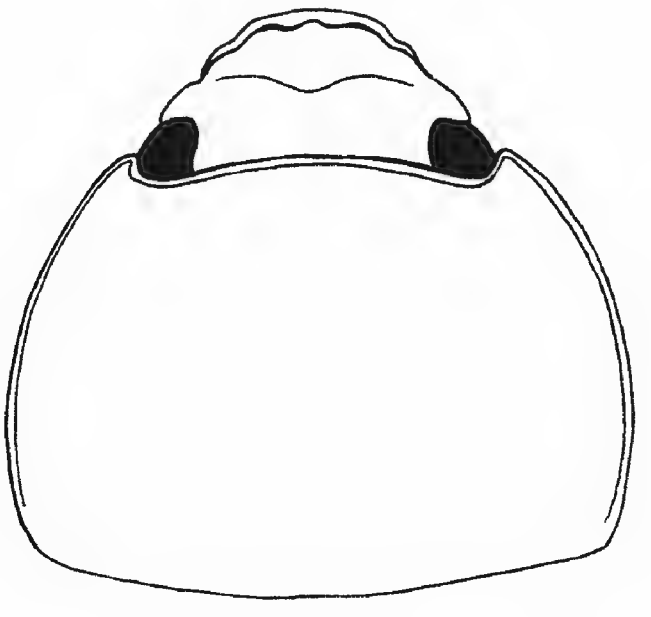

Figure 25. Head and pronotum of *Euetheola bidentata* (Burmeister) (scale bar: 5 mm).

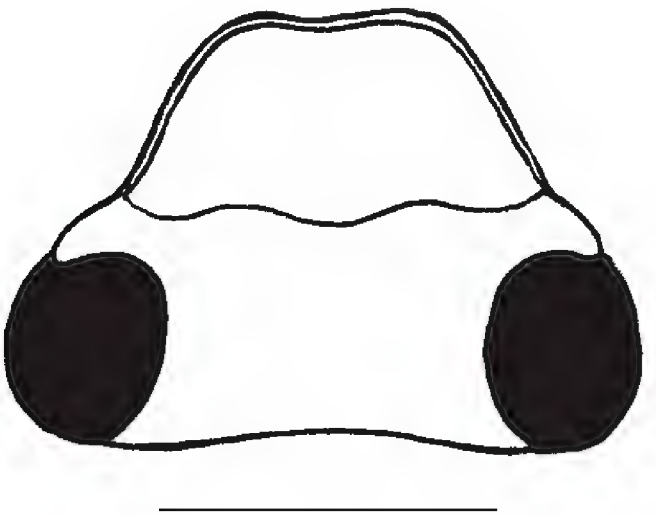

Figure 26. Head of *Parapucaya* sp. (scale bar: 1 mm).

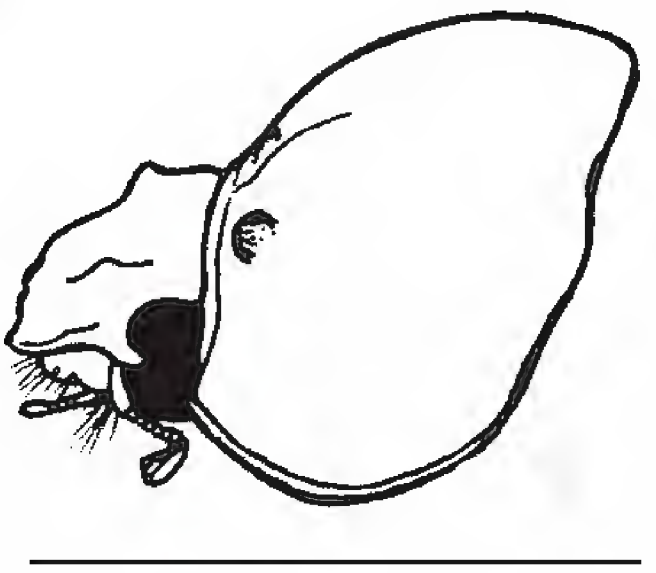

Figure 27. Head and pronotum (lateral view) of *Pucaya pulchra* Arrow (scale bar: 1 cm).

Key to the genera of adult Phileurini of Colombia

1. Outer side of mandibles tridentate **2**
– Outer side of mandibles simply curved **3**
2. Body dorsoventrally flattened. Frons with 2 tubercles. Protibia with 3 small teeth. Apical margin of metatibia with 3 teeth. Pygidium strongly punctate... ..... ***Metaphileurus*** **Kolbe**
– Body not dorsoventrally flattened. Frons with tubercle or posteriorly curved horn. Protibia with 4 teeth, basal tooth reduced. Apical margin of metatibia with 5 teeth. Pygidium convex, finely wrinkled..... ***Oryctophileurus*** **Kolbe**
3. Apex of metatibia truncate, without teeth **4**
– Apex of metatibia acute or with 2–3 teeth **5**

4. Frons with small tubercle. Prosternal process moderately elevated, anterior region convex, densely setose. Protibia quadridentate..... ***Haplophileurus*** **Kolbe**
– Frons with 2 tubercles or horns placed near lateral margins (Fig. 28). Prosternal process variable, punctate. Protibia tridentate..... ***Archophileurus*** **Kolbe**
5. Apex of metatibia tridentate..... **6**
– Apex of metatibia with acute tooth or with 1–2 large teeth..... 7
6. Mentum trapezoidal short. Pronotum with longitudinal, broad furrow, with or without small tubercle in middle of apical margin. Protibia with 3 teeth... ..... ***Amblyoproctus*** **Kolbe**
– Mentum trapezoidal elongated. Pronotum with anterior margin rugose, convex, or with pronotal cavity and 4 subequal tubercles ..... ***Homophileurus*** **Kolbe**
7. Pronotum convex, without longitudinal furrow (Fig. 29). Elytra opaque, with rows of punctures slightly impressed or absent. First tarsomere of metatibia without apical, spiniform process (Fig. 30)..... ***Palaeophileurus*** **Kolbe**
– Pronotum with longitudinal furrow, with or without tubercles or fovea. Elytra shiny, with impressed rows of punctures. First tarsomere of metatibia with apical, spiniform process (Fig. 31)..... **8**
8. Tubercles or horns of frons placed near center of head (Fig. 32). Pronotum without fovea, longitudinal furrow usually incomplete (not reaching anterior margin)..... ***Hemiphileurus*** **Kolbe**
– Tubercles or horns of frons placed near lateral margin of head. Pronotum with anterior, wide fovea, longitudinal furrow usually complete, anterior margin with tubercle at center (Fig 33) **9**
9. Prosternal process triangular, with angulate projection or large conical knob of posterior surface..... ***Paraphileurus*** **Endrődi**
– Prosternal process variable, never with angulate projection..... ..... ***Phileurus*** **Latreille**

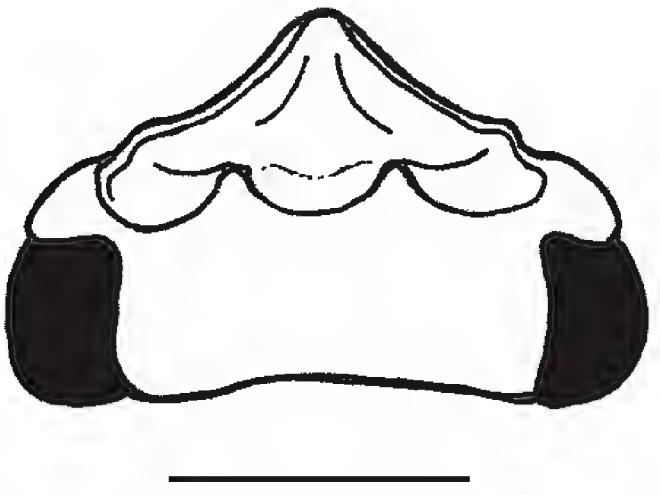

Figure 28. Head of *Archophileurus* sp. (scale bar: 2 mm).

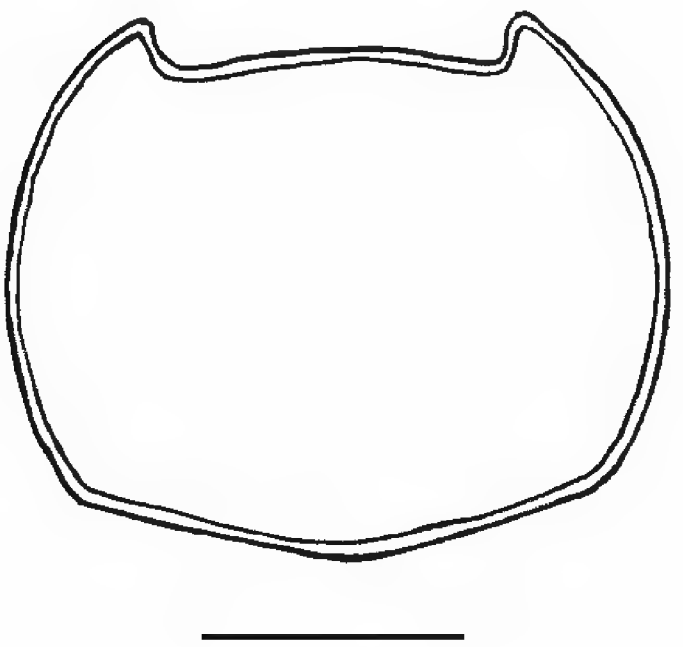

Figure 29. Pronotum of *Palaeophileurus sclateri* (Bates) (scale bar: 5 mm).

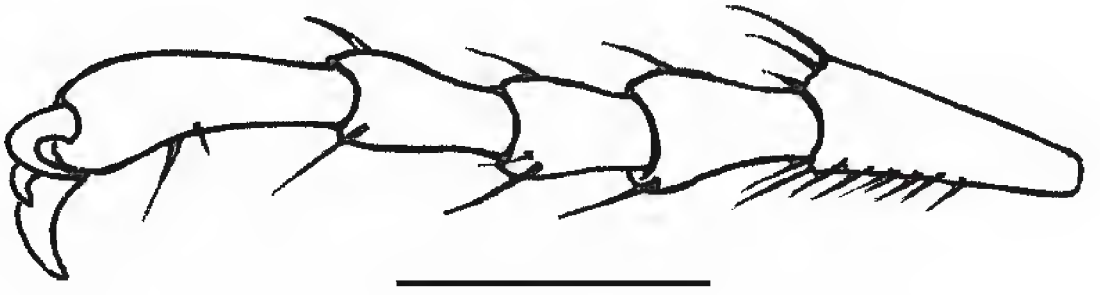

Figure 30. Metatarsus of *Palaeophileurus sclateri* (Bates) (scale bar: 2 mm).

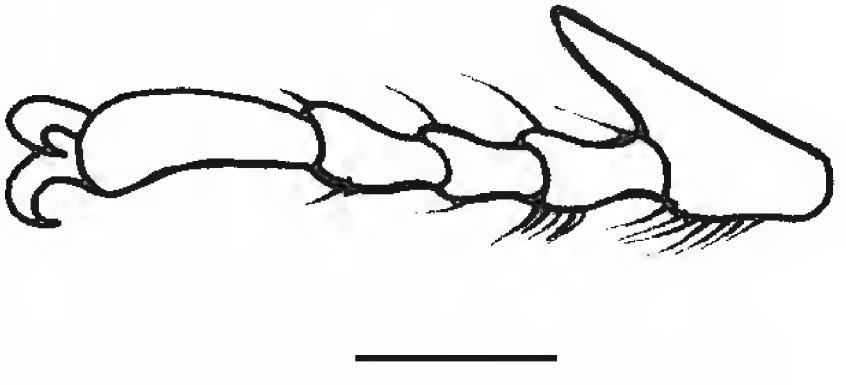

Figure 31. Metatarsus of *Phileurus didymus* (Linnaeus) (scale bar: 2 mm).

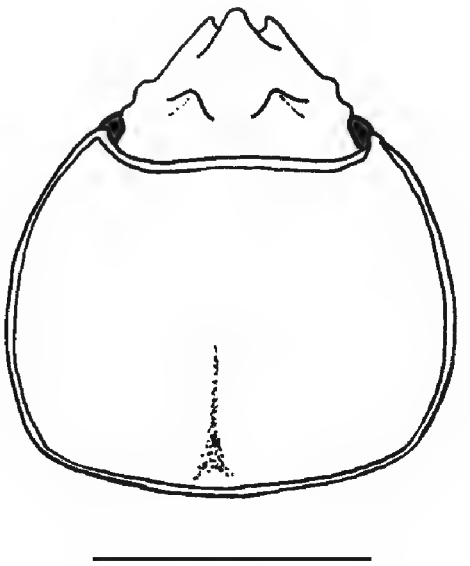

Figure 32. Head and pronotum of *Hemiphileurus* sp. (scale bar: 5 mm).

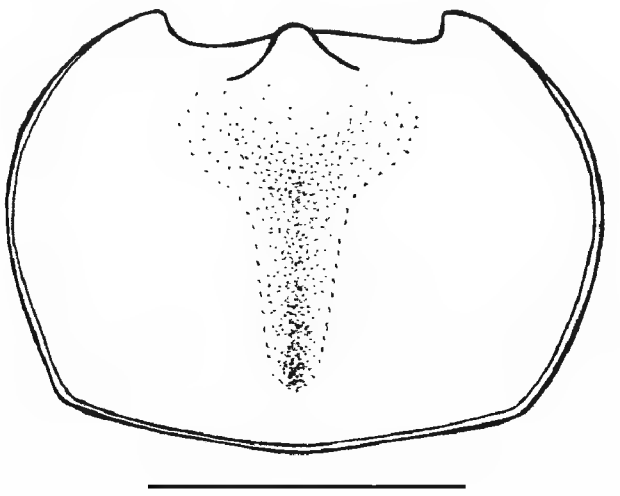

Figure 33. Pronotum of *Phileurus didymus* (Linnaeus) (scale bar: 1 cm).

Clave para los adultos de las tribus de Dynastinae de Colombia

1. Mentón ensanchado o expandido, cubriendo la base de los palpos labiales. Cuerpo mas o menos dorsoventralmente aplanado..... **Phileurini**
– Mentón estrecho o angosto, sin cubrir la base de los palpos labiales. Cuerpo no dorsoventralmente aplanado **2**
2. Cabeza y pronoto convexos, sin cuernos, tubérculos o fóveas, en ambos sexos, o con tubérculos inconspicuos detrás de la sutura fronto-clipeal. Machos con las uñas anteriores más desarrolladas en muchas especies. Tarsos de todas las piernas generalmente largos y cilíndricos..... **Cyclocephalini**
– Cabeza y/o pronoto con cuernos, tubérculos o fóveas en ambos sexos. Machos con uñas anteriores de tamaño variable, desarrollados o no. Protarsos y mesotarsos generalmente cortos y triangulares..... **3**

3. Tarsos anteriores de los machos más largos que las tibias respectivas. Segmentos tarsales posteriores generalmente cilíndricos, segmento basal con fuerte espina apical..... **Dynastini**
– Tarsos anteriores de los machos más cortos o de igual tamaño que las tibias respectivas. Segmentos tarsales expandidos en forma de triángulo, segmento basal de forma variable..... **4**
4. Élitros tomentosos o irregularmente punteados. Puntuaciones ligeramente marcadas. Cuerpo ligeramente deprimido ..... **Agaocephalini**
– Élitros lisos o con puntuaciones dispuestas en hileras distinguibles (excepto en algunas especies de *Heterogomphus*). Puntuaciones fuerte o moderadamente marcadas. Cuerpo no deprimido, robusto..... **5**
5. Ápice de las metatibias generalmente truncado, liso o ligeramente prolongado (Fig 1). Dimorfismo sexual poco acentuado..... **Pentodontini**
– Ápice de las metatibias generalmente crenulado o com dientes agudos notórios (excepto para las espécies de *Coelosis*) (Fig 2). Dimorfismo sexual evidente ..... **Oryctini**

Clave para los géneros de Agaocephalini adultos de Colombia

1. Superficie de los élitros tomentosa, de color pardo grisáceo **2**
– Superficie de los élitros glabra, irregularmente punteada..... **3**
2. Lado exterior de las mandíbulas con 3 dientes (Fig. 3). Proceso prosternal corto o moderadamente largo. Pronoto con cuerno fuerte, corto a largo, plano, estrecho, generalmente dirigido hacia arriba, recto (Fig. 4) ..... ***Lycomedes* Bréme**
– Lado exterior de las mandíbulas con 2 dientes (Fig. 5). Proceso prosternal ausente. Pronoto con cuerno largo, dirigido hacia delante, delgado y curvo (Fig 6)..... ***Spodistes* Burmeister**
3. Tibia anterior con 4 dientes, diente basal muy corto en los machos braquíceros. Cabeza con dos cuernos largos, divergentes, proyectados hacia delante; curvados hacia arriba, ápices redondeados (Fig. 7) ..... ***Aegopsis* Burmeister**
– Tibia anterior con 3 dientes bien definidos. Cabeza con cuerno o grueso, curvado hacia arriba, ápice bifurcado **4**
4. Machos con cuerno cefálico corto y grueso, ligeramente curvo. Pronoto con prominencia dirigida hacia delante de ápice agudo, superficie lisa. Machos sin cuernos y tubérculos en cabeza y pronoto. Cabeza y pronoto de color negro, élitros marrón rojizo..... ***Mitracephala* Thomson**
– Machos con cuerno cefálico largo, curvado hacia arriba, ápice bifurcado. Pronoto convexo o con prominencia alta. Cuerpo de color negro, marrón o con manchas oscuras..... **5**

5. Machos con cuerno cefálico bifurcado en el ápice. Pronoto con prominencia ancha y alta de ápice redondeado, superficie densamente punteada. Machos sin cuerno frontal. Elitros con hileras de puntuaciones fuertemente marcadas. Proceso prosternal alto, ápice dilatado. Cuerpo de color negro o marrón..... ..... ***Horridocalia*** **Endrődi**

– Machos con cuerno cefálico emarginado o bifurcado. Hembras con dos tubérculos transversales en la cabeza. Pronoto convexo y liso. Élitros fuertemente reticulados y finamente punteados. Proceso prosternal ausente. Cuerpo de color pardo amarillo con manchas oscuras..... ***Brachysiderus*** **Prell**

Clave para los géneros de Cyclocephalini adultos de Colombia

1. Tarsos anteriores de los machos engrosados; uña externa más grande que la interna. Hembras con tarsos anteriores y uñas simples. Longitud del clípeo subigual o mayor que la longitud de la frente; apice parabólico, cuadrado, ligeramente emarginado, o redondeado. Tibia posterior semicircular en sección transvesal **2**

– Tarsos anteriores de los machos y hembras sin engrosamiento. Uñas tarsales simples. Longitud del clípeo mas corta que la longitud de la frente; apice trapezoidal (Fig 8). Tibia posterior aplanada dorsoventralmente, no semicircular en sección transversal..... ***Stenocrates*** **Burmeister**

2. Propigidio con numerosas sedas largas, visibles..... ***Chalepides*** **Casey**

– Propigidio sin sedas largas y abundantes..... **3**

3. Clípeo con ápice puntiagudo o estrechamente parabólico **4**

– Clípeo con ápice redondeado, truncado, trapezoidal o emarginado **5**

4. Clípeo con ápice acumindo (Fig. 9). Mentón con ápice emarginado, superficie sin surco en el tercio apical. Base del pronoto con línea marginal..... .....***Mimeoma*** **Casey**

– Clípeo con ápice estrechamente parabólico (Fig 10). Mentón con ápice profundamente emarginado, superficie con surco en el tercio apical. Base del pronoto sin línea marginal .....***Ancognatha*** **Erichson**

5. Clípeo trapezoidal o casi trapezoidal. Margen anterior del pronoto con una proyección central (Fig. 11) ..... ***Dyscinetus*** **Harold**

– Clípeo cuadrado, cuadrangular o parabólico. Margen anterior del pronoto simple..... **6**

6. Clípeo con los lados generalmente divergentes desde la base, ápice ampliamente redondeado (Fig. 12). Maxila sin dientes (excepto en Aspilodea fuliginea).....***Aspilodea*** **Bates**

– Clípeo con lados convergentes desde la base, ápice redondeado, truncado o emarginado. Maxila con dientes evidentes..... 7

7. Clípeo con los lados convergentes, ápice redondeado, parabólico o emarginado (Fig. 13). Machos con los tarsos anteriores engrosados ..... ***Cyclocephala*** **Dejean**

– Clípeo subcuadrado, lados ligeramente convergentes, ápice truncado o emarginado. Machos con los tarsos anteriores simples no engrosados..... ***Erioscelis*** **Burmeister**

Clave para los géneros de Dynastini adultos de Colombia

1. Clípeo emarginado o con 2 dientes espiniformes ampliamente separados. Machos con cuerno cefálico largo y ligeramente aplanado dorso ventralmente, bifurcado en el ápice. Pronoto de los machos con 2 cuernos agudos, 1 en cada ángulo exterior (Fig. 14). Hembras con tubérculo frontal doble o simple, pronoto convexo..... ***Megasoma*** **Kirby**

– Clípeo truncado o con 2 dientes apicales próximos. Machos con cuerno cefálico largo, con dientes en la superficie dorsal, ápice acuminado o redondeado. Pronoto de los machos con cuerno central. Hembras con tubérculo frontal, pronoto convexo..... **2**

2. Mandíbulas con ápice entero, o con una muesca. Pronoto de los machos con cuerno dirigido hacia arriba de ápice acuminado, o con tubérculo erecto y ancho (Fig. 15). Pronoto de las hembras generalmente punteado ..... ***Golofa*** **Hope**

– Mandíbulas con 2 dientes apicales. Pronoto de los machos con cuerno dirigido hacia delante, ápice agudo (Fig. 16). Pronoto de las hembras generalmente rugoso..... ***Dynastes*** **MacLeay**

Clave para los géneros de Oryctini adultos de Colombia

1. Tibia anterior tridentada..... **2**

– Tibia anterior cuadridentada..... **3**

2. Élitros lisos, brillantes, de color negro. Clípeo emarginado o truncado (Bidentado en *M. philoctetes*). Mandíbulas bidentadas (Fig. 17)..... ***Megaceras*** **Hope**

– Élitros con 5 filas de puntuaciones sobre una superficie opaca, de color pardo-rojo. Clípeo estrecho con ápice bidentado. Mandíbulas tridentazas (Fig. 18) ..... ***Coelosis*** **Hope**

3. Élitros con filas de puntuaciones en surcos profundos. Mandíbulas con 2 lóbulos arredondados, similarmente grandes, proyectados desde la parte inferior del clipeo. Cabeza con tubérculo cónico cerca de la margen anterior del clipeo. Machos con prominencia pronotal formando uma cavidad triangular y alcanzando la margen posterior del pronoto ..... ***Gibboryctes*** **Endrődi**

– Élitros lisos, rugosos o cubiertos densamente de puntuaciones, nunca en filas. Mandíbulas variablemente dentadas, nunca con 2 lóbulos grandes arredondeados. Cabeza con 1–2 tubérculos cónicos, nunca cerca del clípeo. Machos con prominencia pronotal de forma variable **4**

4. Cuerpo alongado y subparalelo. Tibia anterior con dientes proyectados casi en angulos rectos. Ápice de la tibia posterior con dos dientes fuertes. Machos con la mitad anterior del pronoto casi liso, con un cuerno (o tubérculo) medio (Fig. 19). Hembras sin cavidad pronotal en el pronoto..... ..... ***Podischnus*** **Burmeister**

– Cuerpo ancho, lados arredondeados. Tibia anterior con dientes proyectados oblicuamente. Ápice da tibia posterior crenulado o con 1,3 o 4 dientes. Machos con la mitad anterior del pronoto densamente cubierto de puntuaciones o rugoso. Hembras con o sin cavidad pronotal en el pronoto **5**

5. Machos y hembras con cuerno em la cabeza. Proceso prosternal corto, no producido después de la mitad de los protrocanteres. Pronoto con margen anterior emarginada hacia el centro (Fig. 20) ..... ***Enema*** **Hope**

– Machos con o sin cuerno en la cabeza. Hembras nunca con cuerno. Proceso prosternal largo, producido después de la mitad de los protrocanteres. Pronoto con margen anterior no emarginada hacia el centro **6**

6. Frente de los machos e hembras con dos tubérculos cónicos, nunca con cuerno. Mandíbulas con tres dientes. Pronoto en los machos con cuerno subapical e generalmente con cuernos laterales o una crista triangular elevada a cada lado (Fig. 21); hembras con cavidad pronotal en el tercio anterior del pronoto.....***Strategus*** **Hope**

– Frente de los machos con cuerno. Frente de las hembras con dos pequeños tubérculos. Mandíbulas simples o con dos dientes arredondeados. Pronoto en los machos con cuerno o protuberancia originándose desde la mitad posterior y con o sin cuernos laterales; hembras generalmente sin cavidad pronotal .... ***Heterogomphus*** **Burmeister**

Clave para los géneros de Pentodontini adultos de Colombia

1. Especies de color negro o marrón muy oscuro casi negro..... **2**

– Especies de color amarillo ocre, pardo claro, rojo o marrón rojizo **6**

2. Mandíbulas con 3 dientes (Fig. 22). Propigidio con área estridulatoria..... **3**

– Mandíbulas con 2 dientes o sin dientes. Propigidio sin área estridulatoria.....**4**

3. Tibia anterior con 4 dientes. Pronto con tubérculo apical, fóvea subapical profunda (Fig. 23). Élitros lisos o moderadamente punteados. Propigidio muy desarrollado, placa pigidial corta ..... ***Bothynus*** **Hope**

– Tibia anterior con 3 dientes. Pronoto conexo, sin tubérculo. Élitros con filas de puntuaciones profundas. Propigidio corto, placa pigidial larga ..... ***Hylobothynus* Ohaus**

4. Clípeo truncado o relativamente contraído en el ápice, bidentado. Pronoto con o sin tubérculo apical y fóvea subapical..... **5**

– Clípeo acuminado, fuertemente dirigido hacia arriba. Pronoto con tubérculo apical grande, fóvea amplia y muy profunda. Ambos lados del pronoto con una carina obtusa..... ***Oxyligyrus* Arrow**

5. Mandíbulas con 2–3 dientes, tercer diente obtuso. Pronoto con tubérculo apical y fóvea profunda subapical (Fig. 24)..... ***Tomarus* Ericsson**

– Mandíbulas sin dientes, borde externo sinuado, redondeado. Pronoto convexo, sin tuberculo o fóvea (Fig. 25)..... ***Euetheola* Bates**

6. Mandíbulas pequeñas, estrechas, borde externo curvo. Clípeo truncado. Pronoto convexo, con fóvea profunda transversa o con dos pequeños tubérculos detrás de la margen anterior. Tibia anterior con 3 dientes..... 7

– Mandíbulas anchas, con dos dientes apicales. Clípeo contraído, emarginado. Pronoto de los machos con prominencia alta y ancha, ápice bifurcado. Fóvea ancha. Hembras con pronoto convexo. Cabeza de los machos con cuerno de ápice redondeado. Hembras con tubérculo. Tibia anterior con 4 dientes..... ***Thronistes* Burmeister**

7. Sutura frontal sobresaliente (Fig. 26). Frente sin tubérculos o cuernos. Pronoto convexo, con dos pequeños tubérculos detrás de la margen anterior..... ***Parapucaya* Prell**

– Sutura frontal ausente. Frente con un tubérculo o cuerno semicónico junto a cada ojo. Pronoto bilobulado, con fóvea transversal profunda (Fig. 27)..... ***Pucaya* Ohaus**

Clave para los géneros de Phileurini adultos de Colombia

1. Borde externo de las mandíbulas con 3 dientes **2**

– Borde externo de las mandíbulas recurvado, simple..... **3**

2. Cuerpo aplanado dorsoventralmente. Frente con dos tubérculos. Tibia anterior con tres dientes pequeños. Margen apical de la tibia posterior con 3 dientes. Pigidio fuertemente punteado ..... ***Metaphileurus* Kolbe**

– Cuerpo no aplanado dorsoventralmente. Frente con tubérculo o cuerno curvado para atrás. Tibia anterior con 4 dientes, diente basal reducido. Margen apical de la tibia posterior con 5 dientes. Pigidio convexo y finamente rugoso..... ***Oryctophileurus* Kolbe**

3. Margen apical de la tibia posterior truncado, sin dientes **4**

– Margen apical de la tibia posterior agudo o con 3 dientes..... **5**

4. Frente con pequeño tubérculo. Proceso prosternal moderadamente elevado, región anterior convexa, densamente setoso. Tibia anterior con 4 dientes..... ..... ***Haplophileurus*** **Kolbe**
– Frente con 2 tubérculos o cuernos localizados cerca de las margenes laterales (Fig. 28). Proceso prosternal variable, punteado. Tibia anterior con 3 dientes .....***Archophileurus*** **Kolbe**
5. Ápice de la tibia posterior con 3 dientes **6**
– Ápice de la tibia posterior con 1 diente ángulo con 1–2 dientes grandes..... 7
6. Mento trapezoidal corto. Pronoto con surco longitudinal ancho, con o sin un pequeño tubérculo en la mitad de la margen apical. Tibia anterior con 3 dientes .....***Amblyoproctus*** **Kolbe**
– Mento trapezoidal alargado. Pronoto con pargen anterior rugosa, convexo o con cavidad pronotal y cuatro tubérculos subiguales.... ***Homophileurus*** **Kolbe**
7. Pronoto convexo, sin surco longitudinal (Fig. 29). Élitros opacos, con filas de puntuaciones ligeramente marcadas o ausentes. Primer tarsómero de la tibia posterior sin proceso espiniforme (Fig. 30).....***Palaeophileurus*** **Kolbe**
– Pronoto con surco longitudinal, con o sin tubérculos o fóveas. Élitros billantes, con filas de puntuaciones bien definidas. Primer tarsómero de la tibia posterior con proceso espiniforme (Fig. 31) **8**
8. Tubérculos o cuernos de la frente cerca del centro de la cabeza (Fig. 32). Pronoto sin fóvea, surco longitudinal incompleto (sin alcanzar la margen anterior) .....***Hemiphileurus*** **Kolbe**
– Tubérculos o cuernos de la frente cerca del margen lateral de la cabeza. Pronoto con fóvea anterior amplia, surco longitudinal completo, margen anterior con tubérculo en la parte media (Fig. 33)..... **9**
9. Proceso prosternal triangular, con una proyección cónica en la superficie posterior.....***Paraphileurus*** **Endrődi**
– Proceso prosternal de forma variable, sin proyecciones .....***Phileurus*** **Latreille**

Synopsis of Dynastinae genera of Colombia

Tribe Agaocephalini

Aegopsis **Burmeister, 1847**
Aegopsis Burmeister 1847: 281.

Distribution: Costa Rica and Panama to northwestern South America. Colombia: Caquetá, Cundinamarca, Meta, Putumayo, Tolima, Valle.

Diversity: 4 species. Colombia: 2 species; *A. curvicornis* Burmeister, *A. westwoodi* Thomson (Endrődi 1985; Ratcliffe 2003; Restrepo et al. 2003).

***Brachysiderus* Waterhouse, 1881**
Brachysiderus Waterhouse 1881: 409.

Distribution: Ecuador, Colombia, Peru, Bolivia, Brazil. Colombia: Huila.

Diversity: Worldwide: 6 species. Colombia: 1 subspecies; *B. quadrimaculatus tridentiger* (Prell) (Endrődi 1985; Joly 1992; Grossi and Grossi 2005; Abadie et al. 2008).

***Horridocalia* Endrődi, 1974**
Horridocalia Endrődi 1974: 49.

Distribution: Colombia: Valle

Diversity: Monotypic genus: *H. delislei* Endrődi (Endrődi 1985; Restrepo et al. 2003).

***Lycomedes* Bréme, 1844**
Lycomedes Bréme 1844: 298.

Distribution: Colombia, Ecuador. Colombia: Antioquia, Boyacá, Caldas, Cauca, Cundinamarca, Huila, Tolima, Valle.

Diversity: 7 species. Colombia: 4 species; *L. burmeisteri* Waterhouse, *L. hirtipes* Arrow, *L. ramosus* Arrow, *L. reichei* Bréme (Endrődi 1985; Restrepo et al. 2003).

***Mitracephala* Thomson, 1859**
Mitracephala Thomson 1859: 34.

Distribution: Peru, Colombia, Ecuador, Bolivia. Colombia: Huila.

Diversity: 2 species. Colombia: 1 species, *M. humboldti* Thomson (Endrődi 1985; Dechambre 1992; Joly 1992; Mizinuma 1999).

***Spodistes* Burmeister, 1847**
Spodistes Burmeister 1847: 286.

Distribution: southern Mexico to Colombia and Ecuador. Colombia: Antioquia, Meta, Valle.

Diversity: 8 species. Colombia: 4 species; *S. angulicollis* Dechambre, *S. grandis* Sternberg, *S. hopei* Arrow, *S. mniszechi* (Thomson) (Endrődi 1985; Dechambre 1992, 199; Restrepo et al. 2003).

Tribe Cyclocephalini

***Ancognatha* Erichson, 1847**
Ancognatha Erichson 1847: 97.

Distribution: Southern United States to Ecuador, Peru and Bolivia. Colombia: Antioquia, Atlántico, Boyacá, Caldas, Cauca, Chocó, Cundinamarca, Huila, Meta, Nariño, Quindío, Risaralda, Santander, Tolima, Valle,

Diversity: 18 species. Colombia: 7 species; *A. lutea* Erichson, *A. matilei* Dechambre, *A. scarabaeoides* Erichson, *A. ustulata* Burmeister, *A, veliae* Pardo-Locarno, Gonzalez and Montoya-Lerma, *A. vulgaris* Arrow (Endrődi 1985; Ratcliffe 1992; Dechambre 2000a; Restrepo et al. 2003; Pardo-Locarno et al. 2006).

***Aspidolea* Bates, 1888**
Aspidolea Bates 1888: 296.

Distribution: Mexico to Argentina. Colombia: Amazonas, Antioquia, Bolivar, Boyacá, Caldas, Cauca, Cundinamarca, Meta, Risaralda, Santander, Tolima, Valle.

Diversity: 25 species. Colombia: 13 species (Endrődi 1985; Ratcliffe 1992; Restrepo et al. 2003).

***Chalepides* Casey, 1915**
Chalepides Casey 1915: 176.

Distribution: Venezuela to Chile, including West Indies. Colombia: Antioquia, Bolívar.

Diversity: 8 species. Colombia: 1 species, *C. comes* Prell (Endrődi 1985; Restrepo et al. 2003).

***Cyclocephala* Dejean, 1821**
Cyclocephala Dejean 1821: 51.

Distribution: Southeastern Canada to Argentina. Colombia: Amazonas, Antioquia, Boyacá, Caldas, Cauca, Cesar, Chocó, Córdoba, Cundinamarca, Magdalena, Meta, Santander, Tolima, Valle.

Diversity: 325 species. Colombia: 70 species (Endrődi 1985; Ratcliffe 2003; Restrepo et al. 2003; Young and Le Tirant 2005; Ratcliffe 2008).

***Dyscinetus* Harold, 1869**
Dyscinetus Harold 1869: 123.

Distribution: Worldwide: Central United States to Argentina. Colombia: Antioquia, Boyacá, Casanare, Córdoba, Caquetá, Huila, Meta, Nariño, Tolima, Valle.

Diversity: 15 species. Colombia: 6 species; *D dubius* (Olivier), *D. dytiscoides* Arrow, *D. frater* Bates, *D. laevipunctatus* Bates, *D. olivaceus* Höhne, *D. ornaticaudus* Ratcliffe (Endrődi 1985; Ratcliffe 1986; Joly and Escalona 2002; Restrepo et al. 2003)

***Erioscelis* Burmeister, 1847**
Erioscelis Burmeister 1847: 72.

Distribution: Honduras to Argentina. Colombia: Cundinamarca, Meta.

Diversity: 5 species. Colombia: 2 species: *E. columbica* Endrődi, *E. proba* Sharp (Endrődi 1985; Ratcliffe 2003; Restrepo et al. 2003).

***Mimeoma* Casey, 1915**
Mimeoma Casey 1915: 111.

Distribution: Mexico to Brazil, Bolivia and Dominican Republic. Colombia: Meta.

Diversity: 5 species. Colombia: 3 species; *M. acuta* Arrow, *M. signatoides* Höhne, *M. maculata* Burmeister (Endrődi 1985; Ratcliffe 2003; Restrepo et al. 2003).

***Stenocrates* Burmeister, 1847**
Stenocrates Burmeister 1847: 83.

Distribution: Mexico to Argentina. Colombia: Antioquia, Meta, Santander, Tolima, Cundinamarca, Valle.

Diversity: 41 species. Colombia: 7 species; *S. cognatus* Endrődi, *S. difficilis* Endrődi, *S. holomelanus* (Germar), *S. laborator* (Fabricius), *S. laevicollis* Kirsch, *S. omissus* Endrődi, *S. rufipennis* (Fabricius) (Endrődi 1985; Delgado 1991; Dupuis and Dechambre 1995; Restrepo et al. 2003).

Tribe Dynastini

***Dynastes* MacLeay, 1819**
Dynastes MacLeay 1819: 22.

Distribution: Southern United States to South America and West Indies. Colombia: Amazonas, Antioquia, Chocó, Cundinamarca, Putumayo, Santander, Valle.

Diversity: 7 species. Colombia: 2 species, *D. hercules* (Linnaeus), *D. neptunus* Quenzel (Endrődi 1985; Hardy 2003; Restrepo et al. 2003).

***Golofa* Hope, 1837**
Golofa Hope 1837: 42.

Distribution: Mexico to Argentina and Chile. Colombia: Antioquia, Boyacá, Cauca, Cundinamarca, Quindio, Tolima, Valle.

Diversity: 26 species. Colombia: 7 species; *G. aegeon* (Drury), *G. antiqua* Arrow, *G. claviger* (Linnaeus), *G. eacus* Burmeister, *G. paradoxa* Dechambre, *G. pelagon* Burmeister, *G. porteri* Hope (Endrődi 1985; Lauchame 1985; Morón 1995; Restrepo et al. 2003).

***Megasoma* Kirby, 1825**
Megasoma Kirby 1825: 566.

Distribution: Southwestern United States to northern Argentina. Colombia: Amazonas, Antioquia, Chocó, Córdoba, Magdalena, Nariño, Norte de Santander, Valle.

Diversity: 14 species. Colombia: 3 species; *M. actaeon* (Linnaeus), *M. elephas* (Fabricius), *M. mars* (Reiche) (Endrődi 1985; Morón 2005; Restrepo et al. 2003).

Tribe Oryctini

***Coelosis* Hope, 1837**
Coelosis Hope 1837: 88.

Distribution: Mexico to Argentina. Colombia: Antioquia, Risaralda, Santander, Tolima, Valle.

Diversity: 7 species. Colombia: 2 species; *C. bicornis* (Leske), *C. biloba* (Linnaeus) (Endrődi 1985; Restrepo et al. 2003).

***Enema* Hope, 1837**
Enema Hope 1837: 83.

Distribution: Mexico to Bolivia and Argentina. Colombia: Amazonas, Antioquia, Boyacá, Cundinamarca, Huila, Magdalena, Nariño, Risaralda, Valle.

Diversity: 2 species. Colombia: 2 species: *E. endymion* Chevrolat, *E. pan* (Fabricius) (Endrődi 1985; Restrepo et al. 2003).

***Gibboryctes* Endrődi, 1974**
Gibboryctes Endrődi 1974:13.

Distribution: Panama to Brazil, Paraguay and Argentina. Colombia: Putumayo.

Diversity: 4 species. Colombia: 1 species: *G. waldenfelsi* (Endrődi) (Dechambre 2006; Restrepo et al. 2003; Abadie et al. 2008).

***Heterogomphus* Burmeister, 1847**
Heterogomphus Burmeister 1847: 224.

Distribution: Mexico to Argentina. Colombia: Antioquia, Cauca, Chocó, Cundinamarca, Huila, Magdalena, Risaralda, Tolima, Valle.

Diversity: 48 species. Colombia: 12 species (Dechambre 1986 1998a; Ratcliffe 2006; Restrepo et al. 2003).

***Megaceras* Hope, 1837**
Megaceras Hope 1837: 82.

Distribution: Honduras and Nicaragua to Brazil. Colombia: Boyacá, Cundinamarca, Tolima, Valle.

Diversity: 19 species. Colombia: 7 species: *M. crassum* Prell, *M. inflatum* Prell, *M. laevipenne* Prell, *M. morpheus* Burmeister, *M. pauliani* Dechambre, *M. philoctetes* (Olivier), *M. septentrionis* Bates (Endrődi 1985; Dechambre 1981, 1998b-c; Ratcliffe 2007; Restrepo et al. 2003)

***Podischnus* Burmeister, 1847**
Podischnus Burmeister 1847: 237.

Distribution: Mexico to Peru and Brazil. Colombia: Antioquia, César, Cundinamarca, Meta, Santander, Tolima, Valle.

Diversity: 3 species. Colombia: 2 species, *P. agenor* (Olivier), *P. sexdentatus* (Taschenberg) (Endrődi 1985; Restrepo et al. 2003).

Strategus Kirby, 1828

Strategus Kirby 1828: 349.

Distribution: United States, West Indies, to central Argentina. Colombia: Amazonas, Antioquia, Boyacá, Caquetá, Chocó, Cundinamarca, Huila, Magdalena, Meta, Santander, Tolima, Valle, Vichada.

Diversity: 37 species (1 fossil). Colombia: 4 species: *S. aloeus* (Linnaeus), *S. fascinus* Burmeister, *S. hipposiderus* Ratcliffe, *S. jugurtha* Burmeister (Ratcliffe 1976; Endrődi 1985; Restrepo et al. 2003; Morón and Nogueira 2008)

Tribe Pentodontini

Bothynus Hope, 1837

Bothynus Hope 1837: 95.

Distribution: Mexico and Honduras to Peru and Brazil. Colombia: Antioquia, Cundinamarca, Norte de Santander, Tolima.

Diversity: 25 species. Colombia: 4 species: *B. complanus* (Burmeister), *B. herbivorus* (Arrow), *B. medon* (Germar), *B. quadridens* (Taschenberg) (Martínez 1983; Endrődi 1985; Restrepo et al. 2003).

Euetheola Bates, 1888

Euetheola Bates 1888: 314.

Distribution: United States to Argentina. Colombia: Antioquia, Bolívar, Boyacá, Caldas, Caquetá, Córdoba, Cundinamarca, Huila, Magdalena, Meta, Risaralda, Tolima, Sucre, Valle.

Diversity: 4 species. Colombia: 2 species: *E. bidentata* (Burmeister), *E. humilis* (Burmeister) (Endrődi 1985; Restrepo et al. 2003).

Hylobothynus Ohaus, 1910

Hylobothynus Ohaus 1910: 677.

Distribution: Colombia, Ecuador. Colombia: Amazonas, Putumayo.

Diversity: 4 species. Colombia: 2 species: *H. columbianus* Endrődi, *H. obesus* Ohaus (Dechambre 1979; Ratcliffe 1981a; Endrődi 1985; Restrepo et al. 2003).

***Oxyligyrus* Arrow, 1908**
Oxyligyrus Arrow 1908: 341.

Distribution: French Guiana to Bolivia and Argentina. Colombia, Ecuador. Colombia: Amazonas, Putumayo.

Diversity: 9 species. Colombia: 1 species: *O. zoilus* (Olivier) (Endrődi 1985; Restrepo et al. 2003).

***Parapucaya* Prell, 1934**
Parapucaya Prell 1934: 162.

Distribution: Honduras to northwestern South America. Colombia: Antioquia, Cauca, Cundinamarca, Meta, Risaralda, Valle.

Diversity: 2 species. Colombia: 2 species: *P. amazonica* Prell, *P. nodicolis* (Kirsch) (Endrődi 1985; Restrepo et al. 2003).

***Pucaya* Ohaus, 1910**
Pucaya Ohaus 1910: 675.

Distribution: Panama to Colombia and Ecuador. Colombia: Antioquia, Bolivar, Caquetá, Huila, Valle.

Diversity: 3 species. Colombia: 3 species (Endrődi 1985; Restrepo et al. 2003).

***Thronistes* Burmeister, 1847**
Thronistes Burmeister 1847: 177.

Distribution: Colombia, Brasil, Argentina, Uruguay. Colombia: Cundinamarca, Santander.

Diversity: Monotypic genus: *T. rouxi* Burmeister (Endrődi 1985; Restrepo et al. 2003; Abadie et al. 2008).

***Tomarus* Erichson, 1847**
Tomarus Erichson 1847: 95.

Distribution: United States to Argentina and Chile. Colombia: Amazonas, Antioquia, Atlántico, Caldas, Casanare, Cauca, Meta, Putumayo, Valle.

Diversity: 27 species. Colombia: 6 species: *T. bituberculatus* (Palisot de Beauvois), *T. ebenus* (Degeer), *T. fossor* Latreille, *T. gyas* Erichson, *T. maimon* (Erichson), *T. mater-*

nus Prell (Endrődi 1985; Dechambre and Lumaret 1985; Restrepo et al. 2003; Escalona and Joly 2006; Abadie et al. 2008).

Tribe Phileurini

***Amblyoproctus* Kolbe, 1910**
Amblyoproctus Kolbe 1910: 335.

Distribution: Nicaragua, Costa Rica, Panama to Colombia and Brazil. Colombia: Amazonas.

Diversity: 7 species. Colombia: 3 species: *A. piliger* (Perty), *A. torulosus* Kolbe, *A. chalumeaui* Endrődi (Endrődi 1985; Ratcliffe 1988, 2003; Restrepo et al. 2003).

***Archophileurus* Kolbe, 1910**
Archophileurus Kolbe 1910: 334.

Distribution: Southern United States to Colombia, Ecuador, Bolivia, Brazil and Argentina. Colombia: No data.

Diversity: 26 species. Colombia: 2 species: *A. elatus* (Prell), *A. ovis* (Burmeister) (Endrődi 1985; Morón 1990; Restrepo et al. 2003).

***Haplophileurus* Kolbe, 1910**
Haplophileurus Kolbe 1910: 335.

Distribution: Ecuador, Colombia. Colombia: Tolima, Valle.

Diversity: Monotypic genus: *H. unidonis* Burmeister (Endrődi 1985; Ide 1998; Restrepo et al. 2003).

***Hemiphileurus* Kolbe, 1910**
Hemiphileurus Kolbe 1910: 340.

Distribution: United States to Brazil, including West Indies. Colombia: Antioquia, Boyacá, Chocó, Cundinamarca, Meta, Norte de Santander, Tolima, Valle.

Diversity: 42 species. Colombia: 10 species (Endrődi 1985; Ratcliffe 1988, 2001; Dechambre 2000b; Restrepo et al. 2003).

***Homophileurus* Kolbe, 1910**
Homophileurus Kolbe 1910: 336.

Distribution: Mexico to Brazil, Paraguay and Cuba. Colombia: Putumayo, Santander, Valle.

Diversity: 9 species. Colombia: 2 species: *H. quadrituberculatus* (Palisot de Beauvois), *H. waldenfelsi* Endrődi (Endrődi 1978, 1985; Restrepo et al. 2003).

***Metaphileurus* Kolbe, 1910**
Metaphileurus Kolbe 1910: 334.

Distribution: Colombia and Brazil. Colombia: No data.

Diversity: 3 species. Colombia: 1 species: *M. explanatus* (Burmeister) (Endrődi 1985; Ide 1998; Restrepo et al. 2003).

***Palaeophileurus* Kolbe, 1910**
Palaeophileurus Kolbe 1910: 335.

Distribution: Panama, Colombia, Ecuador, Guyana, French Guiana, Brazil. Colombia: Amazonas, Meta.

Diversity: 8 species. Colombia: 1 species: *P. sclateri* (Bates) (Endrődi 1985; Ratcliffe 2002; Restrepo et al. 2003).

***Paraphileurus* Endrődi, 1978**
Paraphileurus Endrődi 1978: 98.

Distribution: Panama, Venezuela, Colombia, French Guiana. Colombia: Cauca.

Diversity: 3 species. Colombia: 1 species: *P. impressus* Endrődi (Endrődi 1978, 1985; Restrepo et al. 2003; Ratcliffe 2003).

***Phileurus* Latreille, 1807**
Phileurus Latreille 1807: 103.

Distribution: United States to Argentina. Colombia: Amazonas, Antioquia, Boyacá, Casanare, Cauca, Cundinamarca, Tolima, Valle.

Diversity: 19 species. Colombia: 5 species: *P. didymus* (Linnaeus), *P. hospes* Burmeister, *P. kaszabi* Endrődi, *P. rufus* Dechambre, *P. valgus* (Olivier) (Endrődi 1978, 1985; Restrepo et al. 2003).

***Oryctophileurus* Kolbe, 1910**

Oryctophileurus Kolbe 1910: 334.

Distribution: Colombia, Peru, Bolivia. Colombia: Boyacá, Cauca.

Diversity: 3 species. Colombia: 1 species: *O. nasicornis* (Burmeister) (Endrődi 1985; Ide 1998; Restrepo et al. 2003).

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References

Abadie EI, Grossi PC, Wagner PS (2008) A field guide of the Dynastinae family of the south of South America. Argentina, 119 pp.

Baraud J (1985) Coléopterés Scarabaeoidea. Fauna du Nord de l´Afrique du Maroc au Sinaï, Editions Lechevalier, Paris, 651 pp.

Bates HW (1888) Pectinicornia and Lamellicornia, Family Dynastinae. In: Godman FD, Salvin O (Eds). Biología Centrali-Americana, Insecta, Coleoptera, Vol. II, Part 2: 296–342.

Browne DJ, Scholtz CH (1995) Phylogeny of the families of Scarabaeoidea (Coleoptera) based on characters of the hindwing articulation, hindwing base and wing venation. Systematic Entomology 20: 145–173.

Browne DJ, Scholtz CH (1999) A phylogeny of the families of Scarabaeoidea (Coleoptera). Systematic Entomology 24: 51–84.

Burmeister HCC (1847) Handbuch der Entomologie. (Coleoptera, Lamellicornia Xylophila et Pectinicornia), Vol. 5, Berlin, Germany, 584 pp.

Casey TL (1915) A review of the American species of Rutelinae, Dynastinae and Cetoniinae. Memories of the Coleoptera 6: 1–394.

Dechambre RP (1979) Nouveaux Dynastidae Pentodontini américains (Coleoptera Scarabaeoidea). Revue Française d'Entomologie (N.S.) 1(3): 101–105.

Dechambre RP (1981) Nouvelles espèces de Dynastidae de la region Néotropicale [Coleoptera Scarabaeoidea]. Revue Française d'Entomologie (N.S.) 3: 123–128.

Dechambre RP (1986) *Heterogomphus carayoni*, une nouvelle espèce de coléoptère Dynastidae. Annales de la Société Entomologique de France (N.S.) 22: 306–307.

Dechambre RP (1992) Nouveaux Dynastidae de la tribu Agaocephalini (Col. Scarabaeoidea). In: Les Coléoptères du Monde. The Beetles of the World. Vol.14. Dynastidae américains, pp. 77–81.

Dechambre RP (1998a) Deux nouvelles especes d' *Heterogomphus* Burmeister, 1847 (Coleoptera, Dynastidae). Revue Française d'Entomologie (N. S.) 20: 41–44.

Dechambre RP (1998b) *Megaceras brevis* n. sp., une nouvelle espèce de Dynastidae du Perou (Co. Scarabaeoidea). Bulletin de la Société Entomologique de France 103: 192.

Dechambre RP (1998c) Les *Megaceras* du groupe *philoctetes* (Olivier, 1789) (Coleoptera, Dynastidae). Coléoptères 4(10): 127–136.

Dechambre RP (2000a) *Ancognatha matilei* nouvelle espèce de Cyclocephalini de Colombia (Coleoptera, Dynastidae). Revue Francaise d´Entomologie (N.S.) 22 (4), 183–184.

Dechambre RP (2000b) Dix nouvelles espèces d´*Hemiphileurus* Kolbe, 1910 Coleoptera, Dynastidae). Coléoptères 6: 21–32

Dechambre RP (2006) Une nouvelle espéce de *Gibboryctes* Endrődi, 1974 (Coleoptera, Dynastidae). Coléoptères 12(10): 155–157.

Dechambre RP, Lumaret JP (1985) Un *Ligyrus* nuveau (Coleoptera: Dynastidae). Description de l´imago, de la larve et indications éthologiques. Revue Française d´Entomologie (N.S.) 7: 107–110.

Delgado L, Pérez A, Blackaller J (2000) Claves para determinar a los taxones genéricos y supragenéricos de Scarabaeoidea Latreile, 1802 (Coleoptera) de México. Folia Entomológica Mexicana 110: 33–87.

Dupuis F, Dechambre RP (1995) Mise au point sur les *Stenocrates* du groupe *cultor* (Coleoptera: Dynastidae). Revue Française d´Entomologie (N.S.) 17: 59–61.

Endrődi S (1966) Monographie der Dynastinae (Coleoptera, Lamellicornia) 1. Teil. Entomologische Abhandlungen, Herausgegeben vom Staatlichen Museum für Tierkunde in Dresden 33: 1–457.

Endrődi S (1969) Monographie der Dynastinae 4. Tribus: Pentodontini (Coleoptera, Lamellicornia) 1. Amerikanische Pendotontini. Entomologische Abhandlungen, Herausgegeben vom Staatlichen Museum für Tierkunde in Dresden 37(1): 1–145.

Endrődi S (1970) Monographie der Dynastinae (Coleoptera) 3. Tribus: Agaocephalini (4. Mitteilung). Acta Zoologica Academiae Scientiarum Hungaricae 16(1–2): 27–96.

Endrődi S (1976a) Monographie der Dynastinae 5. Tribus: Oryctini (die Arten von Amerika) (Coleoptera: Melolonthidae). Folia Entomologica Hungarica 29(2): 9–174.

Endrődi S (1976b) Monographie der Dynastinae (Coleoptera) 6. Tribus: Dynastini. Acta Zoologica Academiae Scientiarum Hungaricae 22(3–4): 217–269.

Endrődi S (1977) Monographie der Dynastinae 8. Tribus: Phileurini, amerikanische Arten I. (Coleoptera). Folia Entomologica Hungarica 30(1): 7–45.

Endrődi S (1985) The Dynastinae of the World. Dr W. Junk, Dordrecht, Netherlands, 800pp.

Escalona HE, Joly LJ (2006) El género *Ligyrus* Burmeister, 1847 en Venezuela (Coleoptera: Scarabaeidae: Dynastinae: Pentodontini). Boletín Sociedad Entomológica Aragonesa 39: 111–137.

Gasca HJ, Fonseca CRV, Ratcliffe BC (2008) Synopsis of the Oryctini (Coleoptera: Scarabaeidae: Dynastinae) from the Brazilian Amazon. Insecta Mundi 0061: 1–62.

Hardy M (2003) Description of a new species of *Dynastes* Kirby (Coleoptera: Scarabaeidae: Dynastinae) from North and Central America. Besoiro 9: 3–7.

Ide S (1998) Sistemática e evolução dos gêneros neotropicais de Phileurini (Coleoptera: Scarabaeidae: Dynastinae). Tese de Doutorado, Universidade de São Paulo, Brasil, 159 p.

Jameson ML, Ratcliffe BC (2002) Seria Scarabaeiformia Crowson 1960, Superfamily Scarabaeoidea Latreille 1802, pp. 1–5. In Arnett RH, Thomas M, Skelley PE, Frank JH (Eds) American Beetles, Volume 2. CRC Press, Boca Raton, FL, 861 pp.

Jameson ML, Ratcliffe BC, Maly V (2002) Review of the genus *Acrobolbia* with remarks on its classification, and a key to the world genera of Cyclocephalini (Coleoptera: Scarabaeidae: Dynastinae). Folia Heyrovskyana 10(1): 1–15.

Jameson ML, Wada K (2004) Revision of the genus *Peltonotus* Burmeister (Coleoptera: Scarabaeidae: Dynastinae) from Southeastern Asia. Zootaxa 502:1–66.

Joly LJ, Escalona H (2002) Dos nuevas especies de *Dyscinetus* Harold de Argentina (Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini). Entomotrópica 17(3): 197–205.

Lawrence JF, Newton AF (1995) Families and subfamilies of Coleoptera (with select genera, notes, references and data on family-group names). In. J. Pakaluk and S. A. Ślipínski (Eds), Biology, Phylogeny and Classification of Coleoptera. Papers Celebrating the 80th Birthday of Roy. A. Crowson. Muzeum I Instytut Zoologii PAN, Warszawa, Poland. pp. 779–1006.

Lauchame G (1985) Dynastini 1: *Dynastes – Megasoma – Golofa.* Lês Coleoptèrés du Monde 5. Sciences Nat, Venette, France, 85 pp, 29 plates.

Martínez A (1983) Nueva especie de *Bothynus* de Brasil (Coleoptera, Scarabaeidae, Dynastinae, Pentodontini) Revista Brasileira de Entomologia 27: 297–300.

Morón MA (1985) Los insectos degradadores, un factor poco estudiado en los bosques de México. Folia Entomológica Mexicana 65: 131–137.

Morón MA (1990) Descripción de una especie nueva de *Achophileurus* Kolbe, 1910 (Coleoptera: Melolonthidae: Dynastinae) Anales del Instituto de Biología (UNAM), Series Zoologica 6: 139–146.

Morón MA (1995) Review of the Mexican species of *Golofa* Hope (Coleoptera: Melolonthidae: Dynastinae) Coleopterists Bulletin 49: 343–386.

Morón MA (2004) Escarabajos, 200 millones de años de evolución. Instituto de Ecologia A.C. y Sociedad Entomológica Aragonesa. Zaragoza, España, 204 pp.

Morón MA (2005) A new species of *Megasoma* Kirby (Coleoptera: Scarabaeidae: Dynastinae) from Sinaloa, Mexico. Zootaxa 1037: 29–36.

Morón MA, Ratcliffe BC (1996) New Tribal Placement of the Genus *Coscinocephalus* Prell, 1936, with Description of the Larva, Pupa and Adult of a New Species from Mexico (Coleoptera: Scarabaeoidea; Dynastinae). Journal of the New York Entomological Society 104(1–2): 48–61.

Morón MA, Ratcliffe BC, Deloya C (1997) Atlas de los escarabajos de México (Coleoptera: Lamellicornia) Vol 1. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO) y Sociedad Mexicana de Entomologia, México, 280 pp.

Morón MA, Nogueira G (2008) A new species of *Strategus* Hope (Coleoptera: Scarabaeidae: Dynastinae) from eastern Mexico. Proceeding of Entomological Society of Washington 110: 95–102.

Neita JC, Ratcliffe BC, Calberto G (2007) Immature Stages of *Aspidolea singularis* (Coleoptera: Scarabaeidae: Cyclocephalini). Revista Colombiana de Entomología 33 (2): 178–182.

Neita JC, Orozco J (2009) Larval and pupal descriptions for the genera *Podischnus* and *Heterogomphus* (Scarabaeidae: Dynastinae: Oryctini). Zootaxa 2168: 34–44.

Neita JC, Ratcliffe BC (2009) Description of the adult female, larva, pupa, and distribution of *Strategus fascinus* Burmeister (Scarabaeidae: Dynastinae: Oryctini). Coleopterists Bulletin 63(3): 367–379.

Papavero N (1994) Fundamentos Prácticos de Taxonomia Zoológica. 2da Edição, Editora Unesp. São Paulo, Brasil, 285 pp.

Pardo-Locarno LC, Morón MA, Gaigl A (2006). Los estados inmaduros de *Coelosis biloba* (Coleoptera: Melolonthidae: Dynastinae) y notas sobre su biología. Revista Mexicana de Biodiversidad 77: 215–224.

Pardo-Locarno LC, González R, Montoya-Lerma J (2006). Description of a new species and new country records of *Ancognatha* Erichson (Coleoptera: Scarabaeidae: Dynastinae) from Colombia. Zootaxa 1139: 63–68.

Ratcliffe BC (1976) A revision of the genus *Strategus* (Coleoptera: Scarabaeidae). Bulletin of the University of Nebraska State Museum 10: 93–204.

Ratcliffe BC (1981a) The fourth *Hylobothynus* spanning the Amazonian gap (Coleoptera: Scarabaeidae: Dynastinae). Coleopterists Bulletin 35: 303–306.

Ratcliffe BC (1981b) *Barutus hartmanni*, a new genus and species from Panama with a key to the New World genera of Pentodontini (Coleoptera: Scarabaeidae: Dynastinae). Coleopterists Bulletin 35: 463–472.

Ratcliffe BC (1988) New species and distributions of Neotropical Phileurini and a new phileurine from Burma (Coleoptera: Scarabaeidae: Dynastinae). Coleopterists Bulletin 42: 43–55.

Ratcliffe BC (1992) A new species of *Ancognatha* from Panama (Coleoptera: Scarabaeidae: Dynastinae). Coleopterists Bulletin 46: 256–259.

Ratcliffe BC (2001) New species of *Hemiphileurus* Kolbe (Coleoptera: Scarabaeidae: Dynastinae) from Mexico, Guatemala, Colombia, and Brazil. Coleopterists Bulletin 55: 433–443.

Ratcliffe BC (2002) Review of the genus *Palaeophileurus* (Coleoptera: Scarabaeidae: Dynastinae: Phileurini) with description of two new species from Peru. Annals of the Entomological Society of America 95: 335–339.

Ratcliffe BC (2003) The Dynastinae Scarab Beetles of Costa Rica and Panamá. Bulletin of the University of Nebraska State Museum 16: 1–506.

Ratcliffe BC (2008) More new species of *Cyclocephala* from South America (Coleoptera: Scarabaeidae: Dynastinae). Coleopterists Bulletin 62: 221–241.

Ratcliffe BC, Cave R (2006) The Dynastinae Scarab Beetles of Honduras, Nicaragua and El Salvador. Bulletin of the University of Nebraska State Museum 21: 1–424.

Restrepo H (1998) Aproximación al conocimiento de los escarabajos fitófagos (Coleoptera: Melolonthidae) en Colombia. Tesis de Pregrado, Facultad de Ciencias, Universidad Nacional de Colombia, Santa Fé de Bogotá,143 pp.

Restrepo H, López-Avila A (2000) Especies de Chisas (Coleoptera: Melolonthidae) de importancia agrícola en Colombia. Corpoica, Bogotá, Colombia, 62 p.

Thomson J (1859) Essai synoptique sur la sous-tribu des scarabaeitae vrais. Arcana Naturae 1: 3–22.

Vallejo F, Morón MA (2008) Description of the immature stages and redescription of the adults of *Ancognatha scarabaeoides* Erichson (Coleoptera: Scarabaeidae: Dynastinae), a member of the soil white grub assemblage in Colombia. Coleopterists Bulletin 62(1):154–164.

Young RM, Le Tirant S (2005) A new *Cyclocephala* from montane Colombia (Scarabaeidae: Dynastinae) Coleopterists Bulletin 59(2):267–270.